MAGNITUDE ESTIMATION OF THE SERIOUSNESS OF CRIME.

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ABSTRACT

The technique of magnitude estimation was used by 115 respondents randomly selected from the general public to estimate the seriousness to society of 25 crimes. The sample comprised 59 females and 56 males. The questionnaire completed by respondents contained a training exercise for magnitude estimation purposes, a list of 25 crime labels and another list of the same crimes in vignette form. A Criminal Attitude Scale (C.A.S.) was also included to measure the relationship between the seriousness estimates given by respondents and the degree of criminality of respondents.

The logged median values of seriousness estimated by respondents for each crime was plotted against the logged maximum sentences for each crime and a power function was obtained. The power function was used to predict the seriousness of crimes by their maximum sentences. This process was repeated to ascertain the relationship between respondents' estimates of seriousness and those of the judiciary and police. Varying degrees of correlation were also found between each of these four populations. The correlation between the seriousness estimates of respondents and the average custodial sentences for the 25 crimes was very high. The implication of this finding is that the public and judiciary agree generally on the seriousness of different crimes. The levels of agreement between the public and the police and the public and the legislature, were not as marked. A very high level of societal consensus was found also from the seriousness estimates of respondents from different demographic groups.

There was no significant experimental effect derived from using separate crime labels and crime vignettes for this study. Future research could endeavour to expand the respondent sample size. As well, a cross modality technique could be employed along with a magnitude estimation survey of crime seriousness for each of the populations within the criminal justice system.

CHAPTER ONE

INTRODUCTION

The seriousness of criminal acts represents an aspect of criminality that is indispensable to legal theory and practice as well as psychosocial research in the forensic field (Fox and Freiberg, 1990). As public perception of crime seriousness may have a significant influence on the process of policy making within a nation's criminal justice system, the study of the perceived seriousness of crimes is of interest to legislators and administrators who assume that the punishment should fit the crime. (Levi and Jones, 1985). Crime seriousness surveys have traditionally been used to explore public opinion and test public consensus on the relative seriousness of different crimes. Researchers such as Wagner and Pease (1978) believe that a valid scale of offence seriousness would be very useful in relation to practical issues like police deployment, recording crime, and the measurement of change in criminal careers.

There have been few attempts to produce a New Zealand seriousness of offence scale. Spier, Luketina, and Kettles (1991) used New Zealand data on offending and sentencing to develop a comprehensive seriousness scale. Their scale claims to represent the seriousness of imprisonable offences, to preserve the relativity between offences, and to be additive. Their scale is intended to be used as a standard to measure trends over time in the seriousness of

offending, and in the seriousness of offences for which any particular sentence is imposed. Spiers *et al.* (1991) stated that it seemed unlikely there was a consensus community view on the seriousness of offending in New Zealand, given the diverse groups making up the community.

Therefore, their scale is not based directly on New Zealand public perceptions of the seriousness of imprisonable offences, and is instead a reflection of the views of the court. Although not necessarily reflecting the views of the community, nevertheless their scale does provide a simple and useful tool for research purposes.

The present research used magnitude estimation to measure the seriousness of various crimes. Respondents in this study numerically assessed what they believed to be the seriousness of each crime. The relationship between the numeric value given to each crime and the average sentence for each crime was subjected to a power function. With the aid of the power function, crimes could be compared as to whether or not their sentences matched their perceived seriousness by the public.

By comparing public perceptions of crime seriousness for a range of crimes with police priority ratings; average sentences passed down by the judiciary; and the statutory maxima of sentences that govern New Zealand society, correlations between each level of the criminal justice system can be established and their degree of congruence determined. At the same time, the question of whether or not societal consensus on this issue exists can be answered.

1.1 CRIME AND PUNISHMENT.

Should the punishment fit the crime? If so, what are the implications for the measurement of crime seriousness? There are many ways in which a society can influence the attitudes of its members. One of these ways is through the punishments and norms the social structure prescribes for social behaviours. According to this view the seriousness of a crime determines the severity of the punishment. (Warr, Meier and Maynard, 1983). Perceptions of crime seriousness therefore can be seen as being important because they are integral to public views of sentencing. It follows then that the task of classifying all offences and their sentences according to the respective gravity of each must be undertaken if a fair fit of crime to punishment is to be achieved. It is desirable that the scale of sentencing for offences does not conflict with the common estimates of the seriousness of those offences because such a conflict might confuse moral judgements, bring the law into disrepute, or disregard the principles of justice between offenders of different crimes. (Ashworth, 1983, cited by Fox and Freiberg, 1991).

Once the public ranking of crimes in terms of their seriousness has been established, the relationship between the public's concerns and the priorities of the relevant authorities can be examined, and the degree of correlation determined. The actions of these authorities can be measured by the police rankings for the clearance of particular crimes, the judiciary's sentencing of each crime type, and the legislator's expediency in (re)setting statutory maxima. The various agencies within the criminal justice system can be seen to be operating in accordance with public perceptions of crime seriousness by concentrating on those particular crimes that the public believe to be the more

serious. Realistically however, the authorities must perform a delicate balancing operation between public perceptions of seriousness and the provision of resources for the prevention, detection and sentencing of all crimes.

The criminal justice system pays a price for permitting someone to enter a life of crime. The cost is measured by the amount spent by the criminal justice system over the duration of the offender's career. If an offender is arrested for the first time at age 16, a rearrest pattern can be computed using a rearrest matrix of probabilities. This produces a probable criminal career pattern for the offender. using this rearrest matrix, calculated that 1000 offenders arrested initially for robbery would accumulate between them 3,670 rearrests for index crimes alone. A feature of these subsequent arrests was that they included a greater proportion of more serious offences than the 1000 original offences. (Wolfgang, Savitz, and Johnston, 1970).

Gescheider, Catlin, and Fontana (1982) found that, although the magnitude estimation of crime seriousness and punishment severity expressed in numeric terms were related with a high Pearson correlation of .87, the relationship was not perfect. Their findings indicated that although the duration of the sentence was not directly proportional to the judged seriousness of the crime, the perceived severity of the sentence was seen as fitting the crime. However, there are reasons why the sentence should not exactly fit the crime. One factor might be the slow response of the judicial system to rapid changes in public opinion on the seriousness of different offences. The judicial system may be in closer agreement with some

average value that represents the average opinions of society over a period of years. For example, prison sentences are adjusted only after a clear change of opinion that holds up for many years. Gescheider *et al.* (1982).

According to Gebotys, Roberts and DasGupta (1988) a consensus appears to be emerging from the research literature that the general public favours a dessert-oriented sentencing philosophy. This supposition is also supported by the research of Warr *et al.* (1983) who state that the average individual is generally less concerned with the utilitarian aims of sentencing such as deterrence, rehabilitation, and incapacitation, than with the principle of the punishment fitting the crime and the offender receiving the punishment that he or she deserves.

The seriousness of a crime has been noted as a significant criterion by the public in determining the appropriate punishments for different offences. In fact, Warr *et al.* (1983) go so far as to say that the perceived seriousness of a crime is the central and perhaps only criterion for fixing punishment. One reason for a study by Rossi, Waite, Bose and Berk (1974) was to see how crime seriousness scores of respondents related to the ways in which the respondents thought each offender should be treated by the courts.

Parton, Hansell and Stratton (1991) put forward the notion that whenever a respondent evaluates a crime, she or he may implicitly ask the question: What severity of punishment is fair for this particular crime? Such respondents may have difficulty focusing only on the component of seriousness that is logically related to the injury or loss experienced by the

victim. Further evidence of the retributive style of thinking is derived from a multi-dimensional scaling study performed by Parton and Stratton (cited by Parton *et al.*, 1991) who found that respondents instructed to evaluate the seriousness of a set of crimes generated the same cognitive map as subjects instructed to judge a suitable punishment for those crimes.

Correlations between the perceived seriousness and the severity of preferred punishments for offences attest to an enduring standard for fixing punishments. According to Warr *et al.* (1983) the persistence of that standard appears to contradict arguments that preferred punishments are subject to short term periodic effects. Particular events or changes in the public mood may have the effect of raising or lowering the entire scale of preferred punishments without affecting the correlation between perceived seriousness and preferred punishments. Alternatively, particular events may change public preferences as to the type of punishment appropriate for a particular offence without radically changing the perceived severity of the punishment (Warr *et al.*, 1983). In most cases the punishment should be seen to fit the crime when the punishment is defined by the perceived severity of the sentence. To ascertain this fit the perceived seriousness of a crime can be found from the average seriousness estimates by society, through techniques like magnitude estimation.

1.2 MAGNITUDE ESTIMATION.

Magnitude estimation is one technique frequently used to measure the seriousness of crime. The technique is based on the assumption that individuals can assess the ratio of subjective values of different items (Stevens, 1959). Magnitude estimation originated from research in psychophysics where it was used to measure subjective levels of sensation. Thurstone (1959) applied the method to socially significant problems such as the judged seriousness of offences. Stevens (1966) also used magnitude estimation as a measurement of social consensus.

The logic of ratio scaling in studies such as the measurement of crime seriousness is no different from that for scaling a physical sensation like brightness or any sensory process that has a quantifiable stimulus. The only requirements necessary are that stimuli be nominally specified and that observers are able to match numbers or other stimuli to the strength of their psychological impressions. (Gescheider *et al.*, 1982). Judgements of crime seriousness are typically made using a system of assigning values along a scale of subjective magnitude. These judgements assume that crimes are not psychologically different from other classes of stimuli. The primary basis on which stimuli are reacted to is evaluative. This indicates the nature of the mental representation that exists when a respondent estimates the seriousness of a crime. It is unclear as to what a respondent actually does when presented with a crime seriousness judgement task. They may be expressing a personal view of moral wrongfulness, or what they think is socially desirable. The respondent may be judging crime stimuli on the basis

of public knowledge of the punitive consequences for different crimes, and/or on the basis of consequences for the victim. Crimes are multidimensional in nature. Because of this Howe (1988) cites impressive experimental support for the assertion that in multiscale judgement situations, evaluation is characteristically the primary dimension of judgement, accounting for at least half of the variance.

As the validity of a social dimension is usually more difficult to assess than that of a sensory dimension, past researchers have resorted to indirect cross-modality matching procedures. Traditional magnitude estimation procedures assessed each respondent's ability to perform the estimation task by means of a training task. A common training task is to have respondents estimate the length of a group of lines by assigning numeric values to them. This task allows estimation of the deviation of respondent's estimates from the proportional relationship between the physical stimulus, i.e. line length. If the same deviation is assumed for a respondent's estimates of social stimuli, then the physical judgements can be used to adjust the values of the respondent's social judgements. Agreement across the different response modes indicates that the magnitude estimation procedure was understood. By following this methodology the construction of a crime seriousness scale is facilitated and the assumptions of magnitude estimation are tested (Parton *et al.*, 1991).

Magnitude estimation relates to the psychophysical law that equal stimulus ratios produce equal sensation ratios. This psychophysical law can be expressed as a power function proposed by Stevens (1955) with the formula:

$$\Psi = k\phi^{n}$$

where:

Ψ is the subjective magnitude of the stimulus.

ϕ is the magnitude of the stimulus.

n is the exponent.

k is a constant of proportionality.

The pioneering work of Sellin and Wolfgang (1964) obtained ratings of the seriousness of 141 offences using samples of judges, police officers, and university students. A magnitude (ratio) scale was used. Sellin and Wolfgang found that respondents handled the magnitude estimation task without difficulty and that there was a significant level of agreement among sample subgroups about both the relative ordering of criminal acts and the scale scores given. In that study, magnitude estimation of the judged seriousness of crimes was found to be a power function of the maximum penalty found in the Pennsylvanian penal code. The resulting exponent of 0.7 indicated that the maximum sentences in the penal code were not proportional to the seriousness of the offences as estimated by the respondents. Although this finding suggests that the punishment did not fit the crime, this is not

certain. It may be that respondents did not think, for example, that a sentence of 10 years is twice as bad as one of 5 years. However, the sentences for the crimes in the Pennsylvanian penal code surveyed by Sellin and Wolfgang were too harsh, as would be expected with maximum sentences.

Gescheider *et al.* (1982) employed the technique of magnitude estimation to establish psychological scales of the seriousness of 22 crimes and the severity of their associated punishments. Respondents determined their estimates of the seriousness of each crime and the severity of its maximum sentence by the amount of pressure they exerted on a handgrip, which was measured by a dynamometer. Although the results of this study suggest that the judgements of crime seriousness made by respondents and the judgements made by legislators of appropriate sentence durations were nonlinear, they were related. The relationship could be described as a power function with an exponent of 0.5 that indicated a negatively accelerated function substantially different from a linear function.

These findings imply that, although sentences increase as the judged seriousness of the crime increases, the duration of the sentence is not directly proportional to the perceived seriousness of the crime. The implication of a systematic deviation from a linear relationship is that the punishments stipulated by the Pennsylvanian penal code did not fit the crime. To ascertain whether the punishment prescribed by statute fits the crime the judged severity of punishments needs to be known. The nonlinear relationship was significantly altered when respondent estimations of the severity of each prison sentence was expressed rather than the actual sentence length itself.

In general, the severity of the sentence matched the seriousness of the crime rather than the actual sentence length. Gescheider *et al.* (1982) also state that through the use of magnitude estimation procedures it is possible to construct a ratio scale for the seriousness of criminal offences.

The approach taken by Sellin and Wolfgang (1964) could be used to develop an index of crime which reflects the total seriousness of crime experienced by a society. Crime derives its seriousness from many different effects. One way of assessing these effects in order to determine their relative importance is to measure public attitudes toward being a victim of different crimes, using a representative sample of individuals and applying scaling techniques. The concepts of utility theory can be applied to these values resulting in estimated disutilities for each type of crime. The unique feature of utilities as distinguished from other measures of value is that the marginal utility of an outcome is inversely proportional to the probability risk of its occurrence that one is willing to take. This makes utilities particularly useful in analyses of decisions on actions directed at affecting the probabilities. The Sellin-Wolfgang indices for property crimes were translated into a utility scale based on the monetary loss by the victim of the crime. By applying the concepts of utility theory to the estimates of seriousness for the various crimes obtained from the public sample surveyed by Sellin and Wolfgang, estimated disutilities of each crime can be achieved. If a person attempts to minimise his or her average disutility, then according to the estimated average disutility figures achieved, that person is equally concerned about the 1 in 200 probability of a burglary and the 1 in 20,000 probability of an aggravated assault. (Wolfgang *et al.*, 1970).

In assessing the performance of the criminal justice system, the incidence of crimes must be balanced against the cost of crime control, including both the dollar and the social costs. Wolfgang *et al.* (1970) ascertained that in the United States the property crimes of burglary, theft of $50 or more, and car conversion accounted for 87% of the index or reported crimes, and presumably 87% of the total social disutility. These crimes also accounted for 81% of the system costs for index crimes, such as detection, apprehension, processing and incarceration of offenders. The eight most serious crime types measured were, murder, rape, robbery, aggravated assault, burglary, theft over $50, car conversion, and theft under $50.

The index used by Wolfgang *et al.* (1970) is dominated by crimes against property and is less sensitive to changes in the rate of serious crimes against the person. Thus the murder rate could increase by 1000%, but if car conversion fell by 10%, the index would decline. The implications of this may be why resources are allocated to the criminal justice system the way they are. In the event that there was an increase in the number of less serious crimes and a slight net decrease in the more serious crimes it would be difficult to say whether or not the crime problem had grown more or less serious without measuring the relative seriousness of the different offences.

1.3 VARIABLES AFFECTING THE MEASUREMENT OF CRIME SERIOUSNESS.

Research on the measurement of crime seriousness raises three points. These are: firstly, a working definition of crime seriousness; secondly, the type of survey used to measure crime seriousness; and thirdly, the

respondent population on whom the survey is conducted. To measure the seriousness of crime an adequate definition of crime seriousness is required. The term "seriousness" is heterogenous in that it conveys many different subjective meanings. An understanding of the seriousness of an offence may well depend on the description of that offence and the context in which the subject is asked to judge (Walker, 1978). Therefore, any definition of crime seriousness is dependent on the respondent's attitudes, beliefs and general knowledge.

The accumulated understanding by the respondent for the events that constitute a particular crime is one part of a definition of crime seriousness. This level of understanding influences the measurement of crime seriousness. For example, different offences bearing the same name, such as fraud, can vary greatly in their method of execution, the damage they cause, and the interests they abuse. Hence the more information the respondent is given about the crime, the less stereotypic the response generally is found to be. Several sources can act to influence a person's view of crime and the varying degrees of seriousness. These include the mass media, statements by politicians, observation of the activities of the local police, conversations with family and friends, reports by victims of crimes, first-hand observation of crimes and criminals, and personal victimisation. (Conklin, 1975, cited by Lampe, 1982). Gebotys *et al.* (1988) found a significant positive relationship between media use and perceptions of seriousness.

Parton *et al.* (1991) state that injury and loss incurred by the victim are what most people consider to be important in perceived crime seriousness. Generally, these injuries and losses are measured by the degree of harm caused. For example, in relation to harm against the person, there is a progression of decreasing seriousness from crimes resulting in death down to lesser assaults. The culpability and characteristics of the offender are the other major components included in comprehensive definitions of crime seriousness. Statutes make reference to the mental element required to commit an offence such as murder. This mental element and the degree of culpability are described by statements such as: intention, recklessness, and negligence. Also, the accountability of offenders is seen to be increased if they have already been convicted and sentenced for a similar offence. (Fox and Freiberg, 1990). As the reader may have surmised, any definition of "seriousness" that refers to a criminal act, is a personal statement that may or may not take into account the factors of harm to the victim, accountability of the offender, and effect on society.

Attitudes towards crime reflect a set of learned rights and wrongs for which there is little room for debate. (Sheley, 1980). Depending on the degree of general knowledge regarding the penalties for various crimes, crime seriousness surveys may merely be tests of information known to respondents. Parton *et al.* (1991) concluded that respondents used information about the status of the victim and the status and culpability of the offender in judging the seriousness of crimes. However, exactly what information in a crime description is relevant to judging crime seriousness is currently unclear.

The types of survey used and the amount of information contained therein have been studied to ascertain what effect, if any, they have on respondents' estimates of crime seriousness. Sheley (1980) concluded that very little evidence existed to suggest that questionnaire form and general item context distort crime seriousness ratings more than minimally. Yaworsky (1981) demonstrated that it was possible to affect the judgements of seriousness of a variety of crimes by manipulating the information a subject was given concerning the maximum penalty for each crime.

Walker (1978) used three methods of assessing the relative seriousness of a set of offences. The three methods were paired comparisons of offences, category scaling, and ratio scaling. Her results revealed a considerable degree of consistency between the three measures. The fact that members of the general population numerically assessed the relative seriousness of a set of offences using these three different methods in such a consistent manner is evidence that assessing the seriousness of crime is a meaningful operation for them.

Surveys that have asked respondents to rank a list of offences in order of seriousness have generally produced consistent rankings across time, jurisdiction, social class and occupational status, according to Fox and Freiberg (1990). This finding, however, must be weighed against the fact that the offences surveyed were generally either very serious or very trivial, and with extremes it is relatively easy to achieve a consensus. In fact, almost all of the studies in Britain and America have found that there is general agreement on the seriousness of violent crimes, as reported by Levi and Jones (1985).

The next facet of measuring crime seriousness is the constituency of the respondents whose estimates determine the level of consensus in any study. Many researchers have examined the extent to which demographic variables, such as the age, race, sex and social class of the respondent, influence a study's consensus. Congruent results between the evaluations of different cultures, as well as between different socio-economic groups, suggest consensus on the issue of crime seriousness can be achieved. (Evans and Scott, 1984; Rossi, Waite, Bose and Berk, 1974). Rossi *et al.* (1974) found little variation between different races and age groups, and surmised that the norms concerning crime seriousness are widely diffused throughout subgroups of society.

Levi and Jones (1985) state that they found a high concordance of opinion both among the public, and between the police and the public on violent offences. Their study also found that few significant differences appeared between the seriousness estimates of offenders and non-offenders or between victims and non-victims. Other studies, however, have disputed the societal consensus on this issue and have found significant differences between social classes and genders. Walker (1978) found that violent crimes were regarded as more serious by males and respondents from higher social classes. In a study of sex differences in the perception of crime and criminals, Lampe (1982) found some significant differences between the sexes. These differences included differences in the ranking of the most serious crimes, and the crimes each gender finds most personally threatening. Different crimes are treated as more personally threatening by each gender. Lampe (1982) found that theft and rape were ranked as fifth and sixth most

personally threatening crimes by males, whereas females ranked rape as the most personally threatening crime and theft in seventh place. Gebotys *et al.* (1988) found that women rated crimes against the person as more serious than men did, and that men rated property crimes as more serious than women did. This finding is the opposite of the results obtained by Walker in 1978. Overall, the research literature is ambiguous on the question of whether gender is related to perceptions of crime seriousness. Some studies have found sex differences while others have not.

Each study has its own idiosyncracies as does each respondent. In the final analysis the assumption must stand that different people have different ideas about the seriousness of different crimes. By using statistical measures based on group means, and surveys that include a majority of offences with small variances of seriousness scores, consistent findings of group consensus can be achieved.

1.4 SENTENCING AND POLICY IMPLICATION.

The New Zealand criminal justice system can be seen as acting under a structure where many of the maximum penalties set by statute were developed over a century ago and have no rational basis or relevance to modern views on the seriousness of crimes. Although the Crimes Act 1961 does get periodically reviewed, the lack of commensurability between the attitudes of society and the legislature seems to remain static. To this researcher's knowledge, no New Zealander has ever been incarcerated for defacing a coin, and the maximum sentence of imprisonment for one year

does not seem commensurate with the threat that this crime presents to society. By setting statute maxima, law makers are stating the relative significance of the values offended by those breaches of the criminal law. The following questions are relevant to this area of research. How much do public perceptions of crime seriousness influence the process of policy making? Are the public's perceptions of the seriousness of crimes defined by the policies of their criminal justice system? How informed is the public in regard to current sentencing policies?

Wuillemin, Richardson and Moore (1986) in their study of the ranking of crime seriousness by different urban and rural cultures of New Guinea concluded that in a developing country it appears that people will change their values by adopting those imposed by the government and its legal system. Alternatively, a nation's criminal code can be seen as a composite expression of the seriousness of a set of crimes as perceived by the members of that society. Thus, societal consensus and the operations of the criminal justice system should correspond to some degree.

The level of congruence between the legislature and the judiciary can be measured by comparing the statutory maximum with the average sentence imposed on each crime. Although an average sentence is shorter than a maximum sentence, an average sentence is a more sensitive measure of the way the judiciary views the seriousness of an offence. Research in Australia by Fox and Freiberg shows that judges accord greater significance than the legislature to crimes against the person, suggesting that the judiciary's view of the seriousness of crimes is quite different from that which appears in the 1958 Crimes Act. (Freiberg and Fox, 1986, cited by Fox and Freiberg, 1990).

The level of congruence between public preferences and statutory or actual sentences will probably become increasingly relevant to those who decide on sentencing policies. This is especially so with plans in New Zealand to introduce a new Crimes bill in 1992 that would give jurors the power to recommend or even to determine the sentence length of a convicted offender. Lampe (1982) raises the point that any large discrepancy between the sexes in the evaluation of crime seriousness may have repercussions in a legal system where female and male jurors, lawyers and judges help determine the degree of sentencing or probation, depending on the seriousness of the offence.

There may be substantial differences in public preferences with respect to statutory punishments, punishments which are imposed, and punishments which are actually served for any particular offence. If, for example, citizens recognise that prison sentences are rarely served in their entirety, then they may wish to increase the severity of punishments imposed. Fox and Freiberg (1990) comment that some common findings of public opinion polls are that the courts do not deal harshly enough with criminals, that leniency by the courts is an important cause of increasing crime, and that stiffer penalties would decrease recidivism. Members of the public may prefer so-called symbolic laws, ie. statutes that carry relatively severe penalties for purposes of deterrence, for offences such as victimless crimes. Therefore, the relationship between preferred statutory punishments and preferred actual punishments needs to be examined.

Another reason for collecting seriousness data is to assess any differences between the seriousness ratings of the public and the police. If there was a discrepancy, and certain crimes were regarded more seriously by the public than by the police, resources could be (re)allocated to deal with those crimes. On the other hand, the fact that a crime is considered very serious by both the police and public does not mean that the public necessarily wish police resources to be diverted away from less serious but more prevalent offences. (Corbett and Simon, 1991). A trade-off therefore exists between the the needs of the public and the practicalities of police work as defined by the policy structure of the police force.

The cumulative effect of media reports of crime on public attitudes toward the seriousness of different crimes may indirectly influence public attitudes toward sentencing. Gebotys *et al.* (1988) refer to a "retributive justice" hypothesis, where a public that is exposed to a steady diet of violent and serious crime in the media may develop a generalised desire for harsher penalties, since ratings of seriousness are highly correlated with the severity of punishments. Warr *et al.* (1983) state that although their respondents assigned punishments to offences in accordance with their perceived seriousness this cannot be construed as conclusive evidence of retributive motives. However, the fact that respondents rely on perceived seriousness to the exclusion of perceived frequency of a crime suggests that there is a priority by which the public reacts to an offender. Although the findings of Warr *et al.* (1983) do not resolve the issue of public motivation for assigning punishment, they do question the assumption of those researchers who presume that the public recommends punishments based on simple

utilitarian grounds, and to legislators who assume that the official justification of punishment, ie. deterrence, is endorsed by the public. If, as the research literature suggests, the general public favour a "just desserts" oriented sentencing philosophy, where the severity of a sentence is a function of the seriousness of the crime and to a lesser extent the criminal history of the offender, while the news media are leading the public to view offences as being more serious than they otherwise would, the inevitable result may be changing views of crime seriousness and increased public demands for harsher penalties.

1.5 RATIONALE FOR THE PRESENT STUDY.

The rationale of this study can be divided into three parts. Firstly, to see whether the technique of magnitude estimation could be used to measure the seriousness of different crimes using a sample of the New Zealand general public. Secondly, to ascertain whether or not the data indicated a consensus societal view, and, thirdly, to investigate whether this community view was comparable to that of the New Zealand police, judiciary, and legislature. In past studies, magnitude estimation has been effective in allowing respondents to estimate the seriousness of different crimes. By using Stevens' power law, the relationship between the estimates of seriousness for different offences and the average sentences passed down on those crimes, can be obtained. Similarly, the function linking estimated seriousness to maximum sentences can be obtained.

The questionnaire used in this study incorporated three additional features. Firstly, a training exercise was used that estimated the deviation of respondent's estimates to standard line stimuli thereby facilitating scale construtions and validity. Secondly, two different forms of crime description, i.e. crime labels and crime vignettes were used. The reasoning behind this step was that respondents may give a different estimate of seriousness to a more elaborate description of a crime. On the other hand, a respondent might give a more stereotypic response to a crime described by its common label. Having a clearer idea of what constitutes a crime may affect the way in which its seriousness is perceived. Thirdly, the addition of the Criminal Attitude Scale, (C.A.S.), was aimed at allowing respondents to provide their opinions of offenders as well as their estimates of the seriousness of different crimes. This enabled respondents to react to crime and criminals as differentiated categories.

Independent variables for studying the social consensus in this study were, the age, gender, socio-economic status of the respondent and whether or not he or she had recently been a crime victim. The dependent variables were the estimates of seriousness given to each crime through the magnitude estimation technique. There are a number of expectations of this research that are similar to those found in the literature. A consensus is expected from the respondents on the overall seriousness of crimes. However, certain differences between the sexes, generations, and social classes may exist, and be represented by dissimilar values of seriousness for specific crimes. A difference of opinion is expected between the estimates of those respondents who have been the victim of a crime and those who have not.

The vignette form of crime description should cause respondents to increase their estimates of crime seriousness compared to the crime label form of description because of the greater degree of detail included in the vignettes. The information regarding the circumstances of the crime, is expected to interfere with the expression of stereotypic judgements by respondents. The expectations regarding the C.A.S. are that the mean scores for respondents in this study will fall within the range of scores indicated for male and female non-offenders, as described by Taylor, (1968).

The level of congruence between the public estimates of seriousness and those reflected by the maximum sentences expressed by the statutes is not expected to be very close. The estimates of the respondents surveyed are expected to be more closely aligned with the average sentences passed down by the courts. The public and police are expected to be similar in their rankings of the overall estimates of crime seriousness, although there may be differences between these two groups regarding the seriousness of specific crimes.

CHAPTER TWO

METHOD

2.1 RESPONDENTS AND PROCEDURE.

Eight streets were randomly selected from a road map of Christchurch city. Questionnaires were randomly ordered and distributed to residents along each street between 10 a.m. and 3 p.m. on Saturday, second of November, 1991. Residents were asked whether they would like to complete a questionnaire dealing with the seriousness of different crimes. If agreeable, the respondent was left a questionnaire and informed that the researcher would be collecting the questionnaire the following afternoon. If collection at this time was inconvenient for the respondent, a stamped addressed envelope was left by the researcher.

Table 1 represents the streets to which the questionnaires were delivered, each street's suburban location within Christchurch, and the number of questionnaires delivered, returned and completed from each street. Three of the streets selected were situated in lower to middle class residential areas. The remaining five streets were either located in middle class or middle to upper class suburbs of Christchurch. This is a subjective observation or estimation on the part of the researcher without the benefit of reference to the property prices of the residences surveyed. All returned questionnaires were classified as completed if the entire five sections in them had been filled out by the respondent.

Table 1. Geographic location of sample and the number of questionnaires distributed, returned and completed.

Street	Location	Number Distributed	Number Returned	Number Completed
Kentlodge Ave.	Avonhead	20	20	19
Camberwell Pl.	Avonhead	20	18	16
Greenhurst St.	Sockburn	20	18	17
Downing St.	HoonHay	22	17	17
Mackworth St.	Linwood	5	4	4
Pannell St.	Aranui	19	15	15
Farnborough St.	Bexley	17	15	12
Patten St.	Avonside	21	18	15
Total		144	125	115

The response rate indicates that 80% of the questionnaires were returned and completed. This left 13% of the questionnaires not returned and 7% that were returned incomplete.

Of the 115 respondents who completed questionnaires, 61 were female and 54 were male. Seven of the male respondents surveyed (13%) had been the victim of a crime within the last 12 months. Twelve of the female respondents (19.7%) had been the victim of a crime within the same period. The median age group for male and female respondents was 26-35 years. Approximately 27% of all respondents, and 37% of respondents who had been the victim of a recent crime, fell into this age group. Table 2 outlines the age and sex of the respondents and whether they had been a crime victim.

Table 2. Age distribution, victim status, and sex of respondents.

Age group	Male	% Males	Male victim	% Victims	Female	% Females	Female victim	% Victims
15-25	6	11.11	0	0.0	6	9.84	1	5.3
26-35	14	25.93	3	15.8	17	27.87	4	21.0
36-45	11	20.37	2	10.5	12	19.67	4	21.0
46-55	8	14.81	1	5.3	16	26.23	3	15.8
56-65	7	12.97	0	0.0	3	4.92	0	0.0
66 and over	8	14.81	1	5.3	7	11.48	0	0.0
Total	54	100.0	7	36.9	61	100.0	12	63.1

Table 3 shows the socio-economic status of respondents, as given by the Elley-Irving socio economic index 1981 census revision. Elley and Irving (1985). Forty seven respondents (41%) did not indicate their occupation or were either students, homemakers, unemployed or retired and could not be coded with an index. The index ranges from 1 to 6, with 1 being the highest socio-economic group. The range of respondents seems to constitute a reasonably representative sample.

Table 3. Socio-economic status of respondents.

Index group	Number of respondents	% of sample
1	13	11.3
2	12	10.4
3	19	16.5
4	14	12.1
5	3	2.6
6	7	6.1
Uncoded	47	41.0
Total	115	100.0

2.2 INSTRUMENTS.

2.2.1. The questionnaire.

The questionnaire used in this study contained five sections. (See Appendix for a version of the questionnaire). The first section required respondents to indicate their age, gender, occupation, and whether or not they had been the victim of a crime within the last twelve months. This method of measuring victimisation is inadequate for any purposes other than obtaining a very crude measurement. The reason for obtaining this measurement was to assess the possible experiential component of victimisation in crime seriousness ratings. The occupation of each respondent was used as an indicator of their socio-economic status.

The second section of the questionnaire was essentially a training exercise for the magnitude estimation procedure. The exercise required respondents to estimate the length of 10 lines, varying in actual length from 1 to 30 centimetres, by assigning them numeric values that had the same ratio as the line lengths. A standard line length of 100 units was high-lighted above the group of lines for respondents to use as a guide.

Section three of the questionnaire asked respondents to apply the technique of magnitude estimation to a list of 25 crimes. The crimes were selected from either the Crimes Act 1961, the Transport Act 1962, or the Drugs Act 1985. Crimes were chosen that were representative of the full variety of criminal offences contained in the statutes. The most serious crime, murder, carried a maximum life sentence, and the least serious, book making, had a

maximum sentence of three months. It was important that the crimes chosen could be readily understood by respondents and able to be differentiated between in terms of seriousness. Table 5, in the results section, states the maximum sentence for each of the 25 crimes.

The standard crime selected was burglary. This was given a set value of 100 units of seriousness. Burglary was thought to be a fairly unambiguous and relatively well known crime, for respondents to use as a standard. The value of 100 units of seriousness was used as it could be worked with easily, and gave respondents an easily multiplied or divisible unit to compare other crimes with. The standard crime was also included in the list of other crimes, to measure the consistency of each respondent's estimates, i.e. whether or not each respondent gave the crime of burglary a value of 100 units.

The fourth section of the questionnaire contained vignettes of each of the crimes listed in section three. Each vignette was a prototypic elaboration of the previous crime. The standard vignette used described the crime of burglary, and was once again given the value of 100 units of seriousness. A different random order was used to list the crimes and vignettes in sections three and four. Also, sections three and four of the questionnaire were randomly ordered in the final versions of the survey to control for order effects. Although the type of vignettes used included information on the harm caused to the victim(s) of particular crimes, they did not reveal any characteristics about the offender, except in two sex crimes, incest and rape, where the offender was described as male.

The questionnaire contained these instructions: Following is a list of crimes. Please make an estimate of what you feel is the seriousness of each crime to society. Estimate the seriousness of each crime relative to the standard. The standard is burglary which has 100 units of seriousness. If you feel a crime is four times more serious than burglary then give it a seriousness rating of 400 units. If you feel a crime is half as serious as burglary then give it a seriousness rating of 50 units, and so on. There is no upper limit; use any number that shows how serious you feel the crime is. If you feel something is not a crime, give it a zero. Feel free to use decimals or fractions. There are no "correct answers" to these questions. Different people have different ideas about the seriousness of different crimes.

The fifth and final section employed a psychometric scale devised in New Zealand by A.J.W. Taylor. The Criminal Attitude Scale, (C.A.S.), was designed to measure the 'degree of criminality' of subjects within an offender population. The C.A.S. consists of thirteen questions which each respondent answers true or false. There are two forms of the C.A.S. One form takes the perspective of the non criminal respondent and is used for non criminal populations. The second form takes the offender's perspective and is used to sample offender populations. (Taylor, 1968). The different forms of the C.A.S. enable different sample groups to respond from their criminal or non criminal backgrounds without changing the essence of the scale. The form used in this research took the perspective of the non criminal respondent. The present researcher believes the C.A.S. can be seen also as measuring the degree of responsibility that non criminal respondents believe offenders take for their actions. The determination of responsibility can be seen as one component of

the foundation for a structured, institutionalised response to the problem of crime. The C.A.S. may show where respondents place the responsibility for crime. The possibility exists in a society that stresses personal freedom and recognises and rewards an individual's achievements, that the responsibility for crime would be attributed to the individual. By including the C.A.S in this study, the relationship between respondent's attitudes toward specific crimes and their attitudes toward offenders was able to be examined.

2.2.2. Sentencing data.

The main source of sentencing data used for this study, was a report by Spier, Southey, and Norris, 1991, for the Department of Justice in New Zealand. The report included justice statistics on the conviction and sentencing of offenders in New Zealand from 1981 to 1990. The information of interest to this study was selected statistics presented in the form of the average custodial sentence length in months, for various types of offences. The data on average sentences were taken from all court cases that ended with a conviction, and were the average of all sentences passed down by High court, District court, and Youth court judges for a particular type of crime in any one year. Therefore, the data are not an accurate indicator of specific cases. The statutory maximum sentences data were obtained from the Crimes Act 1961, the Transport Act 1962, and the Drugs Act 1985. The brief crime headings used, along with their average and maximum sentence lengths, can be found from Table 5 in the results section.

2.2.3. Pilot Study.

The questionnaire was piloted on a group of volunteers of different ages, gender and occupations. Each volunteer was asked to complete the questionnaire, identify any problems they had, and offer suggestions as to how the questionnaire could be improved. The researcher recorded the time each volunteer took to complete the questionnaire. The comments of the volunteers resulted in ten crimes being deleted from the questionnaire because of their ambiguity or the crimes not being well known. This in effect reduced the number of crimes listed from thirty five to the twenty five actually used. The revised and final form of the questionnaire was then piloted on a second group of volunteers. The time taken to complete the questionnaire was reduced and no further problems were identified.

CHAPTER THREE

RESULTS

3.1 INTRODUCTION.

The results of this study fall into five areas. These are, firstly, using the findings of the training exercise to determine the degree of respondent accuracy in estimating physical and social stimuli using magnitude estimation. Secondly, gauging the effect on respondents' estimates of seriousness through the use of crime labels and crime vignettes on the questionnaire. Thirdly, assessing the degree of public consensus on the issue of crime seriousness by analysis of the differences in the means of seriousness estimates of the various demographic subgroups. To discern the level of societal consensus on the issue of crime seriousness in New Zealand the fourth section of the results compares estimates from this and other sample populations. The fifth and final section contains the findings of the Criminal Attitude Scale for the respondent sample.

The data were analysed using the Statview software on the Apple Macintosh. A straight line produced on ratio-ruled coordinates represents a power function, the slope of the line being a measure of the power exponent. The power function for this data is given by the regression equation obtained from the lines of best fit for logged geometric means of seriousness estimates by respondents plotted against logged average sentences, logged maximum sentences, and logged seriousness estimates by the New Zealand police.

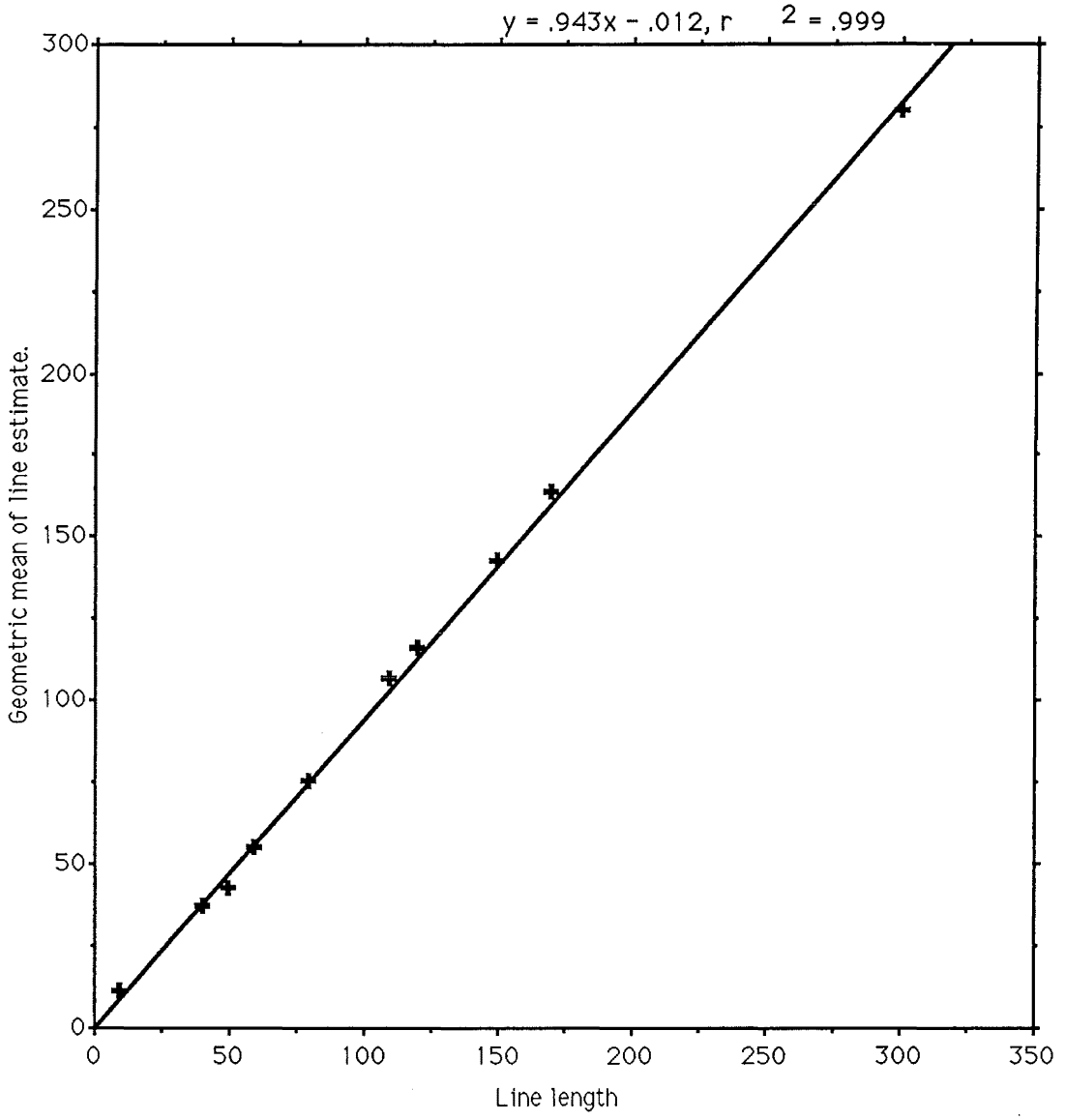
For example, the log of the geometric mean of estimated values of seriousness for each crime was plotted against the log of average sentences imposed by judges for those crimes in New Zealand between 1985 and 1990. Plotting a psychophysical relationship provides a way of determining how the magnitude of people's judgements is related to the magnitude of sentences imposed by the judiciary.

The constant given by the regression equation is useful when measuring whether different populations give higher overall estimates of seriousness than other populations and whether different demographic subgroups give higher overall estimates of seriousness than other demographic subgroups. The correlation between the logged values of seriousness estimates by different sample groups can be calculated from the proportion of the variance given by the line of best fit.

3.2 RELATIONSHIP BETWEEN ESTIMATED VALUES AND LINE LENGTHS OF THE TRAINING EXERCISE.

Simple regression was used to analyse the degree of relationship between the geometric mean of respondents' estimates of line length and actual line length. Figure 1 shows the geometric mean of the estimated values of each line length relative to their actual length. This relationship is expressed by the regression equation at the top of the graph. The r^2 value is significant, ($p<.001$) and indicates a very close relationship between respondents' estimates and line lengths. In aggregate, the respondents clearly were scaling line lengths accurately and understood the magnitude estimation procedure.

Figure 1. Geometric means of the estimates of line length as a function of the actual line lengths of the training exercise.



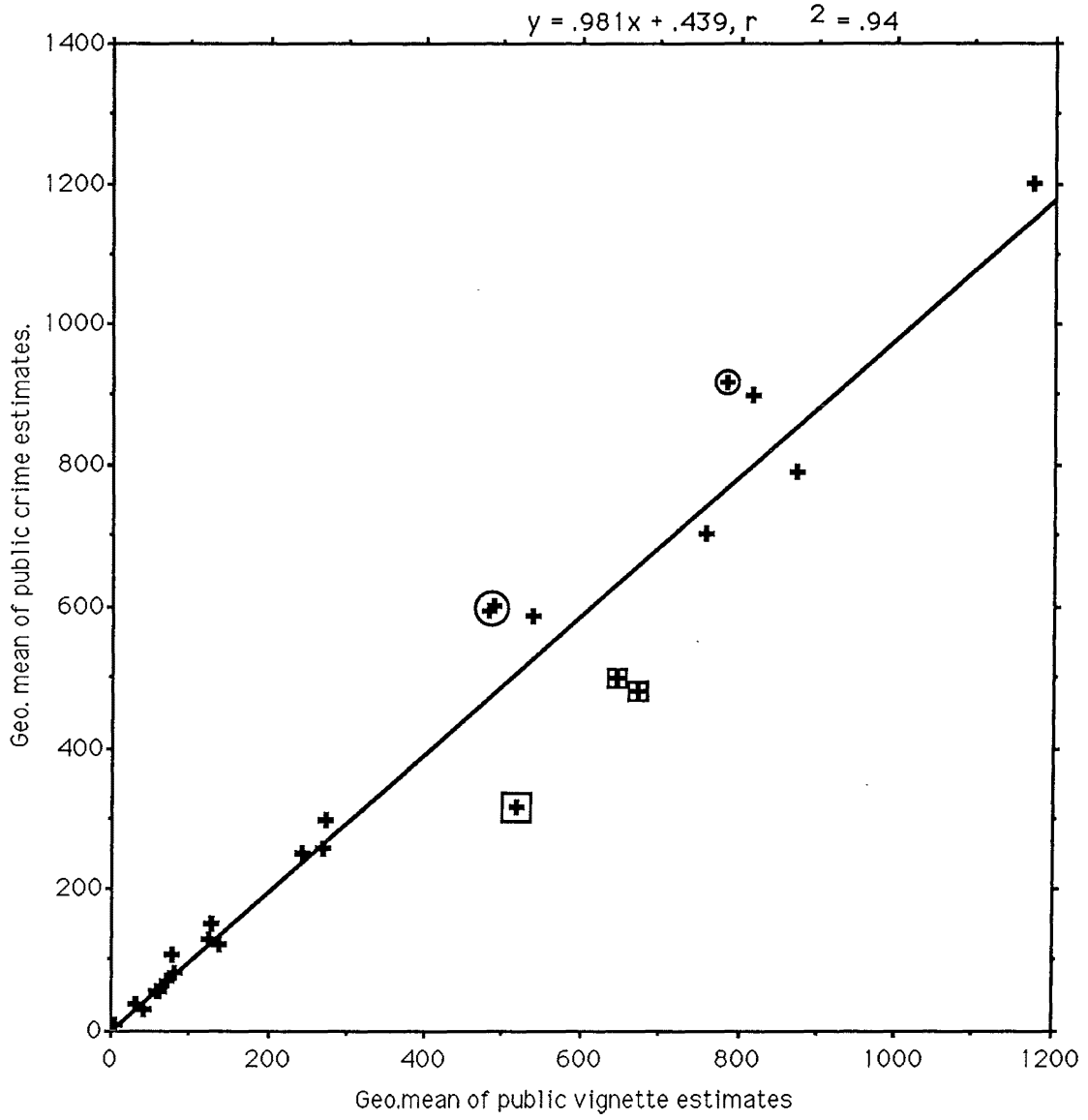
3.3 CORRELATION BETWEEN THE GEOMETRIC MEANS AND MEDIANS OF ESTIMATES FOR CRIMES AND VIGNETTES.

The median value and geometric mean of the estimates of seriousness given by respondents for each crime and vignette were both calculated. The Pearson correlation between the geometric means and medians of all estimates for each crime given by respondents was r = .99. This very high correlation suggests that the particular statistical measure used to express the average values of seriousness per crime for the group consensus is optional. The correlation between the geometric mean and median values given by respondents when estimating the seriousness of each vignette was r = .99 suggesting that for the vignette estimates, as for the crime estimates, the type of measure used is arbitrary. To avoid repetition, all future references to the central value of group estimates will be of the geometric mean and not the median of group estimates.

The degree of correlation between the geometric mean of crime estimates and the geometric mean of vignette estimates was r = .97, and significant ($p<.001$). This correlation suggests a very high level of congruence between the estimates given by respondents to the two forms of crime description. Because the estimates given for the vignettes are significantly correlated with the estimates given for crime labels, the remaining results are not compromised by using only the estimates given for crime labels. Figure 2 shows the geometric mean of respondent's estimates for the crime label description of each crime relative to the respondent's estimates for the crime vignettes. The correlation of r = .97 indicates that the overall agreement

between respondents rests largely on agreement about the relative seriousness of crimes and vignettes. Although the correlation between the estimates given to crime vignettes and crime labels was very high, a number of the crimes surveyed lay away from the line of best fit as seen in figure 2. These deserve identification for they represent a deviation in respondents' estimates for the different questionnaire versions of the same crimes. The three crimes, ringed on the graph and found farthest above the line, in decreasing order of seriousness according to the geometric means of estimates given by respondents to the crimes were, rape, abandoning a child, and kidnapping. The three crime vignettes boxed on the graph and found farthest below the line of best fit, in decreasing order of seriousness according to the geometric means of estimates given by respondents to the vignettes, were aggravated assault, aggravated assault of a police officer, and common assault. The common ground between these crimes is that they are all crimes against the person. This suggests that there was more influence of circumstances by respondents for these six particular crimes against the person, and that in general there may be more variability in the seriousness estimates of crimes against the person.

Figure 2. Geometric mean of all respondents' seriousness estimates of crime labels against the geometric mean of all respondents' seriousness estimates of crime vignettes.



3.4 EFFECT OF DEMOGRAPHIC VARIABLES ON SERIOUSNESS ESTIMATES.

A t-test was performed for each crime, to determine whether there was a difference in the means of seriousness estimates depending on the respondents' gender. Two significant results were obtained from the respondents' estimates for the twenty five crimes surveyed. There were differences in the means between the estimates of each gender for the crime of brothel keeping, ($t(112) = -2.213$, $p<.05$) and the crime of defacing a coin, ($t(112) = -2.076$, $p<.05$). In both cases the crimes were seen as more serious by females. A second t-test measured the difference between the two independent means of the estimates of victims and non-victims. The same two crimes of brothel keeping and defacing a coin produced significant differences between this demographic group. Respondents who had been the victim of a crime rated brothel keeping more seriously than non-victims did, ($t(110) = 2.304$, $p<.05$). Non-victims rated the crime of defacing a coin more seriously than victims did, ($t(110) = -2.763$, $p<.01$).

The fact that 63% of the respondents claiming to be victims were female probably explains the correspondence of these results, but why female respondents and respondents who had been the victim of a recent crime, rated brothel keeping more seriously is open to debate. The difference in means between subgroups in regard to defacing a coin is also difficult to explain. Of the twenty five crimes surveyed these were the only two for which significant differences occurred. This result in itself is interesting in that crimes such as rape, and to a lesser degree child molestation, abandoning

a child, and assaulting a child might have been expected to be but were not seen as more serious by female respondents. Equally interesting is the finding that those respondents who had been the victim of a crime did not regard crimes involving a victim more seriously than non-victim respondents. Nor did victims consider victimless crimes as less serious than non-victim respondents. These results imply either that there is a wide spread level of societal consensus on the seriousness of different crimes or that researchers need to look elsewhere for experimental variables that may produce differences in the estimates of seriousness by the general public. This may require the use of different crimes in future surveys and/or the use of a larger respondent sample.

ANOVAs were performed on the independent logged geometric means of estimates for each crime obtained from the six different age groups of respondents. There was one significant difference obtained from the twenty five crimes. The crime that produced a significant difference in seriousness estimates between the six age groups, was the non payment of $100, ($F$ (5, 108) = 2.29; p<.05). The differences occurred between respondents aged 26-35 and respondents aged 56-65, (F (1, 40) = 5.03; p<.05), and between respondents aged 26-35 and respondents aged 66 or older, (F (1, 45) = 13.59; p<.05). Although the older respondents rated this crime more seriously than those aged 26-35 there was no discernible pattern over the intermediate age groups for older respondents to rate this crime more seriously. No trends were found that indicated a relationship existed between a respondents' age and the seriousness estimates for any of the other crimes surveyed. Respondents' estimates of seriousness did not generally rise

or fall as their age increased. There were no significant results obtained from ANOVA of the independent means of seriousness estimates obtained from the six socio-economic groups into which respondents were classified, for any of the twenty five crimes surveyed.

In summary, two moderately significant differences were found in the seriousness estimates between male and female respondents for the crimes brothel keeping and defacing a coin. One moderately significant and one clearly significant difference was found between the estimates of victims and non victims, for the same two crimes disagreed upon by male and female respondents. The variance in the estimates of seriousness for the non payment of $100, given by the six different respondent age groups was found to be of significant difference, albeit moderately. None of the crimes for which differences were found were regarded as very serious by respondents. Finally, there were no significant differences found between the seriousness estimates of any socio-economic group for any of the crimes surveyed. Taken together, these findings suggest that there was a clear consensus on the estimation of crime seriousness for the crimes in this survey by the sample.

Consensus was also investigated by between group correlations. The logged geometric means of crime seriousness estimates from different demographic subgroups, such as male and female, were regressed against each other. The correlations obtained from the regression equations of demographic subgroups were all high. Table 4 shows the correlations between each demographic subgroup. The highest correlation, $r(24) = .99$, $p<.001$, was obtained from the correlation of the logged geometric mean of estimates by respondents from the youngest two age groups, ie. 15 to 35 year

olds, and the logged geometric mean of estimates by respondents in the two middle age groups, 36 to 55 year olds. The regression equation for this relationship was $y = .764 x + .575$. The lowest correlation, $r (24) = .97$, $p<.001$, was found by correlating the logged geometric mean of estimates from the youngest two age groups of respondents, and the logged geometric means of estimates from the oldest two age categories of respondents, ie. 56 years and over. The regression equation for this relationship was $y = .762x + .687$. Overall, these correlations were all high and imply that a consensus existed on the issue of crime seriousness by the respondents of this study.

TABLE 4. Correlations between demographic subgroups for the crimes surveyed.

Demographic subgroups.	Correlation (r).
Male and Female	.98
Victim and Non-victim	.98
15-35 years and 36-55 years	.99
15-35 years and 56 or older	.97
36-55 years and 56 or older	.98
S.E.S. 1-2 and S.E.S. 3-4	.98
S.E.S. 1-2 and S.E.S. 5-6	.98
S.E.S. 3-4 and S.E.S. 5-6	.98

3.5 RELATIONSHIP BETWEEN THE SERIOUSNESS ESTIMATES OF DIFFERENT SAMPLE POPULATIONS.

The degree of correlation between the different levels of the criminal justice system and the public on the issue of crime seriousness can be examined by comparing the respective seriousness estimates of each for the various crimes surveyed. Table 5 shows the geometric mean of the present sample's ratings of seriousness along with information about police priorities and sentence lengths. Table 6 shows ranked seriousness derived from these data. The interquartile range is the middle 50 per cent of the estimates given by respondents for the crimes surveyed. There was little difference in the magnitude between the interquartile range and the geometric mean value of respondents' estimates of seriousness for each crime. The geometric mean values of seriousness were generally indicative of the majority of respondents' estimates. Data on the average sentences and police clearance priority for some crimes were not available.

TABLE 5. Estimations of crime seriousness.

Crime	Statutory maximum (1) (Days)	Average sentence 1985-1990 (2) (Days)	Police 1985 (3) (1-100)	Public 1991 (4) (Units)	Interquartile range of estimates.
Murder	Life	Life	98	1200	1000
Rape	5110	1935	95	916	800
Kidnapping	5110	991	95	592	500
Armed robbery	5110	959	83	584	500
Blackmail	5110	-	-	294	300
Incest	3650	1014	95	790	650
Fraud	3650	263	86	248	225
Child molestation	3650	1223	88	900	700
Burglary	3650	255	73	129	100
Abandoning a child	2555	-	79	599	500
Offensive weapon	1825	140	63	257	210
Brothel keeping	1825	-	50	53	78
Aggravated assault	1095	283	89	478	400
Aggravated assault of a police officer.	1095	-	85	496	500
Assaulting a child.	730	-	94	701	500
Rioting	730	253	78	150	200
Non-payment of money.	730	171	70	38	50
Common assault	365	161	76	315	300
Sell cannabis	365	314	90	107	100
Receiving property	365	180	64	79	100
Theft	365	171	70	70	100
Defacing a coin.	365	0	-	8	10
Possess Cannabis	90	58	83	54	80
Driving while disqualified.	90	159	45	119	100
Book making	90	-	41	27	50

(1) Maximum sentence for each crime as found in the Crimes Act 1961, the Drugs Act 1985, and the Transport Act 1962.

(2) Average sentence imposed on each crime in New Zealand by the courts between 1985 and 1990. Spier, Southey, and Norris (1991).

(3) Police clearance priority value for each crime. Asher (1988).

(4) Present study.

TABLE 6. Rankings of crime seriousness.

Crime	Statutory maximum (1)	Average sentence. 1985-1990 (2)	Police. 1985 (3)	Public. 1991 (4)
Murder	1	1	1	1
Rape	2	2	2	2
Kidnapping	2	5	2	7
Armed robbery	2	6	11	8
Blackmail	2	-	-	11
Incest	6	4	2	4
Fraud	6	9	9	14
Child molestation	6	3	8	3
Burglary	6	10	16	16
Abandoning a child	10	-	13	6
Offensive weapon	11	16	20	13
Brothel keeping	11	-	21	22
Aggravated assault	13	8	7	10
Aggravated assault of a police officer.	13	-	10	9
Assaulting a child.	15	-	5	5
Rioting	15	11	14	15
Non-payment of money.	15	13	17	23
Common assault	18	15	15	11
Sell Cannabis	18	7	6	18
Receiving property	18	12	19	19
Theft	18	13	17	20
Defacing a coin.	18	-	-	25
Possess Cannabis	23	18	11	21
Driving while disqualified.	23	16	22	21
Book making	23	-	23	24

(1) Ranking of maximum sentence for each crime as found in the Crimes Act 1961, the Drugs Act 1985, and the Transport Act 1962.

(2) Ranking of average sentence imposed on each crime in New Zealand by the courts between 1985 and 1990. Spier, Southey, and Norris, 1991.

(3) Ranking of police clearance priority for each crime. Asher 1988.

(4) Present study.

A number of details require attention at this juncture. Firstly, the seriousness scale devised by Speir, Luketina, and Kettles (1991) was based on the proportion of offenders given a custodial sentence and the average custodial sentence length imposed on them. No significant differences were found between their scale and the scale of average sentences listed in table 5. A comparison between the estimates of respondents and the average sentences was thus sufficient. The average sentence for each crime was regarded as an estimate of the seriousness of that crime by the judiciary. For the purpose of these analyses the maximum sentence for each crime was regarded as a seriousness estimate for that crime by the legislature. The seriousness estimates given by the respondent sample were described as public estimates for comparisons between different populations.

Secondly, the police clearance priority scale was not a ratio scale but merely a ranking of importance by police for the list of crimes, eg. the offence of book making has half the clearance priority of murder. For this reason, a rank correlation test between the estimates of respondents and the police for each crime is a more suitable statistical measure than simple regression. The rank correlation between the geometric mean of estimates of respondents and the police was ($r(23) = .77$, $p < .01$). This level of correlation, although fairly high, suggests that there were differences in the emphasis placed on certain crimes between the general public and the New Zealand police.

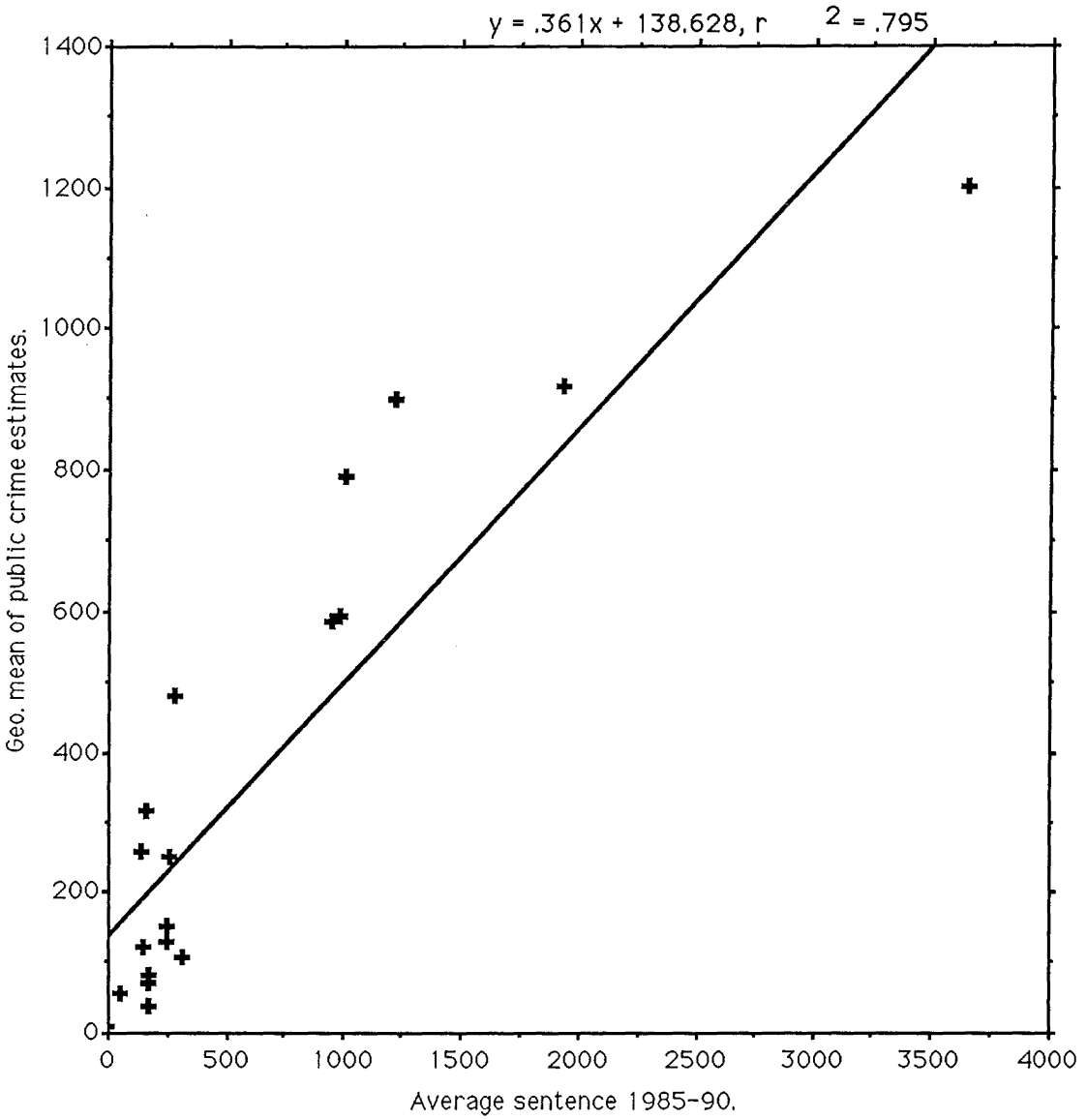
Simple regression was used to analyse the degree of relationship between the geometric means of estimated values from different sample populations. Figure 3 shows the simple regression of the geometric means of respondent's estimates against the average sentence for each crime, with the regression line

y = .361 x + 138.628, and a correlation between estimates of r = .89. Figure 4 shows the logged geometric mean of estimates by respondents against the logged average sentence for each crime, with a regression line of y = .838 x + .234, and correlation of r = .85. The difference in regression lines indicates that figure 3 is a better description of the relationship between public estimates of seriousness and average sentences, as a higher correlation was obtained. This indicates that a higher percentage of variability in the estimated values is predictable from the variability in the average sentences when the data is not logged and that Stevens' power law does not hold here for the data analysed. A higher correlation was obtained from the relationship between the geometric means of estimates by the public and the judiciary.

If the logged seriousness estimates of respondents and the judiciary were identical a theoretically expected eeponent of 1.0 would be found. As the seriousness estimates given by these two populations for each crime were not identical the exponent falls short of 1.0 and is in fact .838. The relationship between the public and the judiciary produced an exponent that was, however, the closest to 1.0 of any of the exponents found when the logged seriousness estimates by populations were regressed against one another.

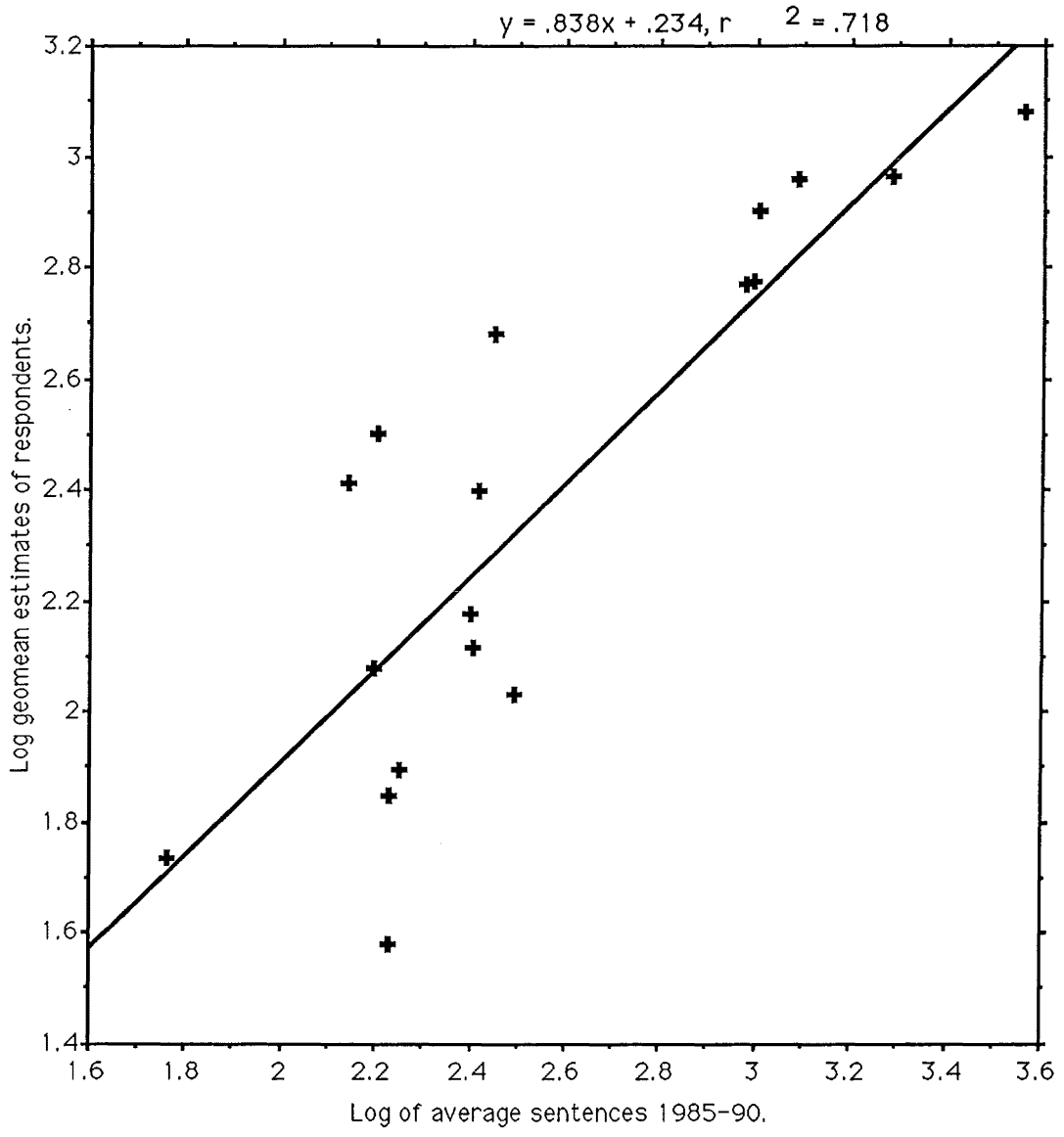
When a category scale is plotted against a metric scale the characteristic function is curvilinear on a linear - linear graph. Usually the function has a negatively accelerated slope that is typically concave downwards, as seen in figures 3 and 4. However, there is no metric scale represented in either figure 3 or figure 4. If the length of average sentences handed down by the judiciary are seen as a category scale, rather than a magnitude scale, then the scale of average sentences used in these analyses represents a measurement of the categorical means of the judgements of crime seriousness by the judiciary and not a scale of the seriousness of the crimes themselves. When magnitude scales, such as the estimates of respondents in this study are compared to category scales, such as the scale of average sentences, in direct matches against metric stimuli, ie. length in days of a custodial sentence, the relationship between types of scales is invariably curvilinear. This finding is important as it distinguishes the difference between magnitude and category scales, as well as describing the relationships between different populations in these results. The differences between category and magnitude scales are mentioned in the discussion.

Figure 3. Geometric means of the seriousness estimates of respondents against the average sentences for each crime.



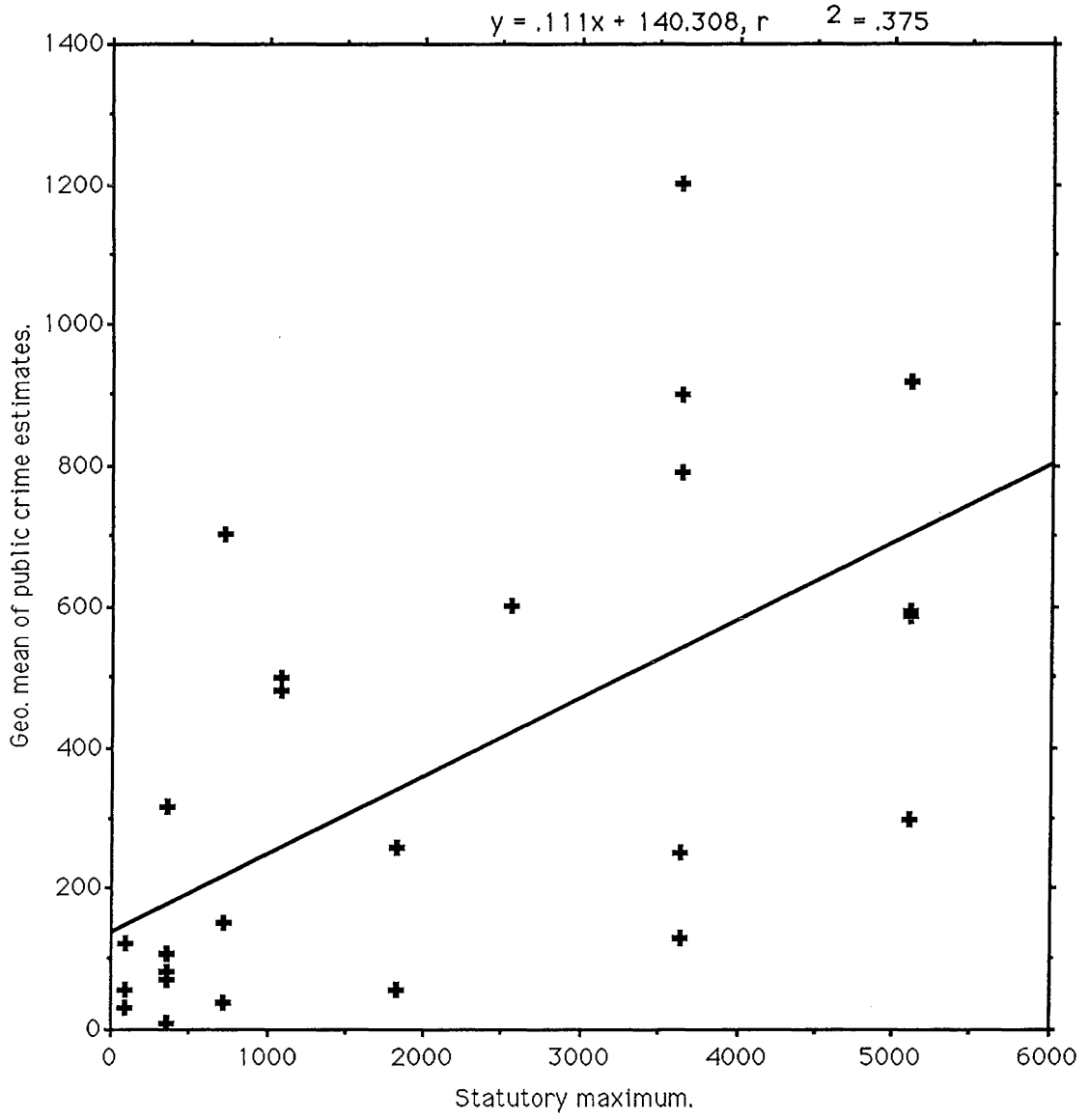
The relationship in figure 3 is curvilinear. This result is due to the types of scales used to measure data from the different populations in this study. As the function is curvilinear the line of best fit may not be appropriate for this analysis. Therefore any deviates must deviate from the curvilinear function in figures 3 and 4.

Figure 4. Logged geometric means of the seriousness estimates of all respondents against the logged average sentence for each crime.



The correlation between the logged estimates of the public and the judiciary was relatively high, (r (18) = .85, p<.001).

Figure 5. Geometric means of the seriousness estimates of all respondents against the statutory maximum sentences for each crime.



Figures 6 and 8 show the relationships between the logged geometric means of estimates by respondents and logged maximum sentences and logged police clearance values, respectively. Both these relationships, have a lower correlation than that between respondents and average sentences

portrayed by figure 4. The relationships represented in figures 6 and 8 have slightly higher r^2 values than those of figures 5 and 7 where logged values of seriousness were not used. This implies that a straight line, as seen in figures 5 and 7, is not as accurate as the power function at describing the relationship between the seriousness estimates of the public and the police, and the public and the legislature. The scale used to measure the maximum sentences for crimes prescribed by the legislature produces more proportional, ratio- preserving measures of opinion strength than the scale of average sentences. Therefore, the measures of seriousness by the legislature in relation to those of the respondent sample, for the crimes surveyed, is a better representation of a ratio - ratio scale.

The crimes farthest above the line of best fit, that have been ringed in figure 6, were regarded by the public as being more serious than by the legislature. This result is of interest as the seriousness estimates of the legislature are the maximum sentences for crimes under present New Zealand law. These crimes were, in decreasing order of seriousness: assaulting a child, common assault, and driving while disqualified. The boxed crimes farthest beneath the line of best fit, were regarded as more serious by the legislature than by the public. These were, in decreasing order of seriousness: brothel keeping, non payment of money totalling $100, and defacing a coin. These findings are expanded upon in the discussion.

Figure 6. Logged geometric means of the seriousness estimates of all respondents against the logged statutory maximum sentences for each crime.

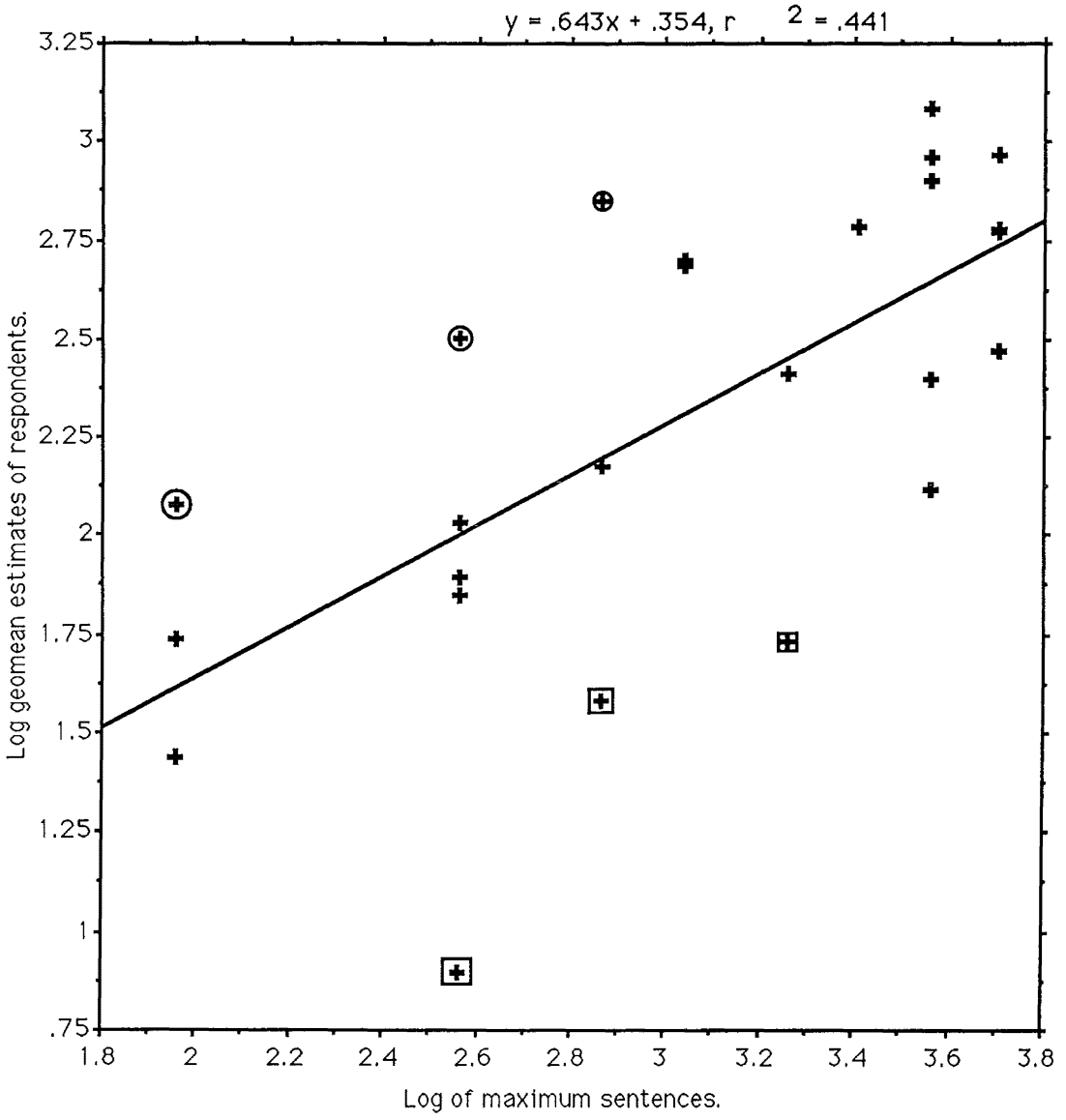


Figure 7. Geometric means of estimates by all respondents against the ratings of clearance priority by the New Zealand police.

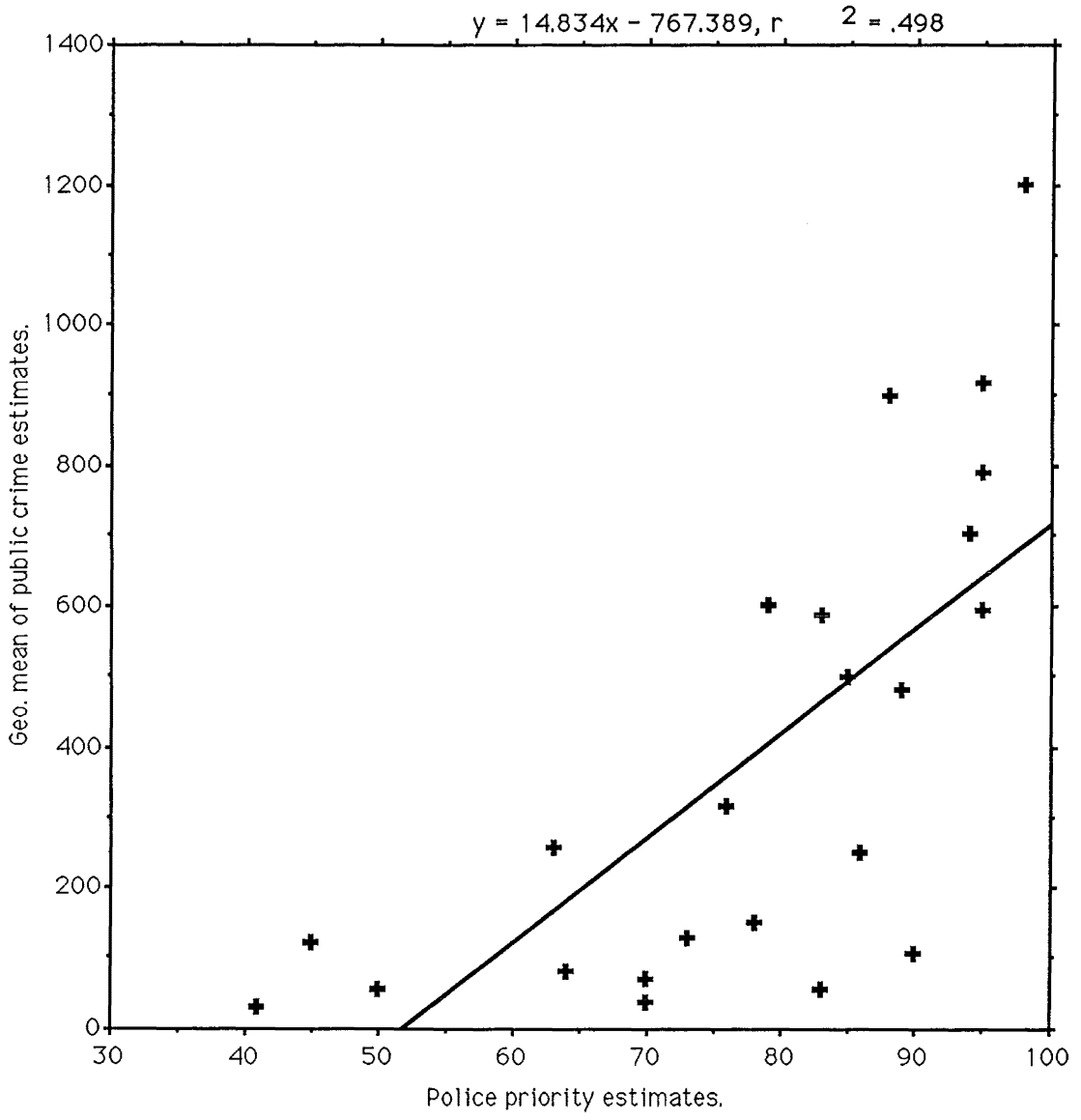
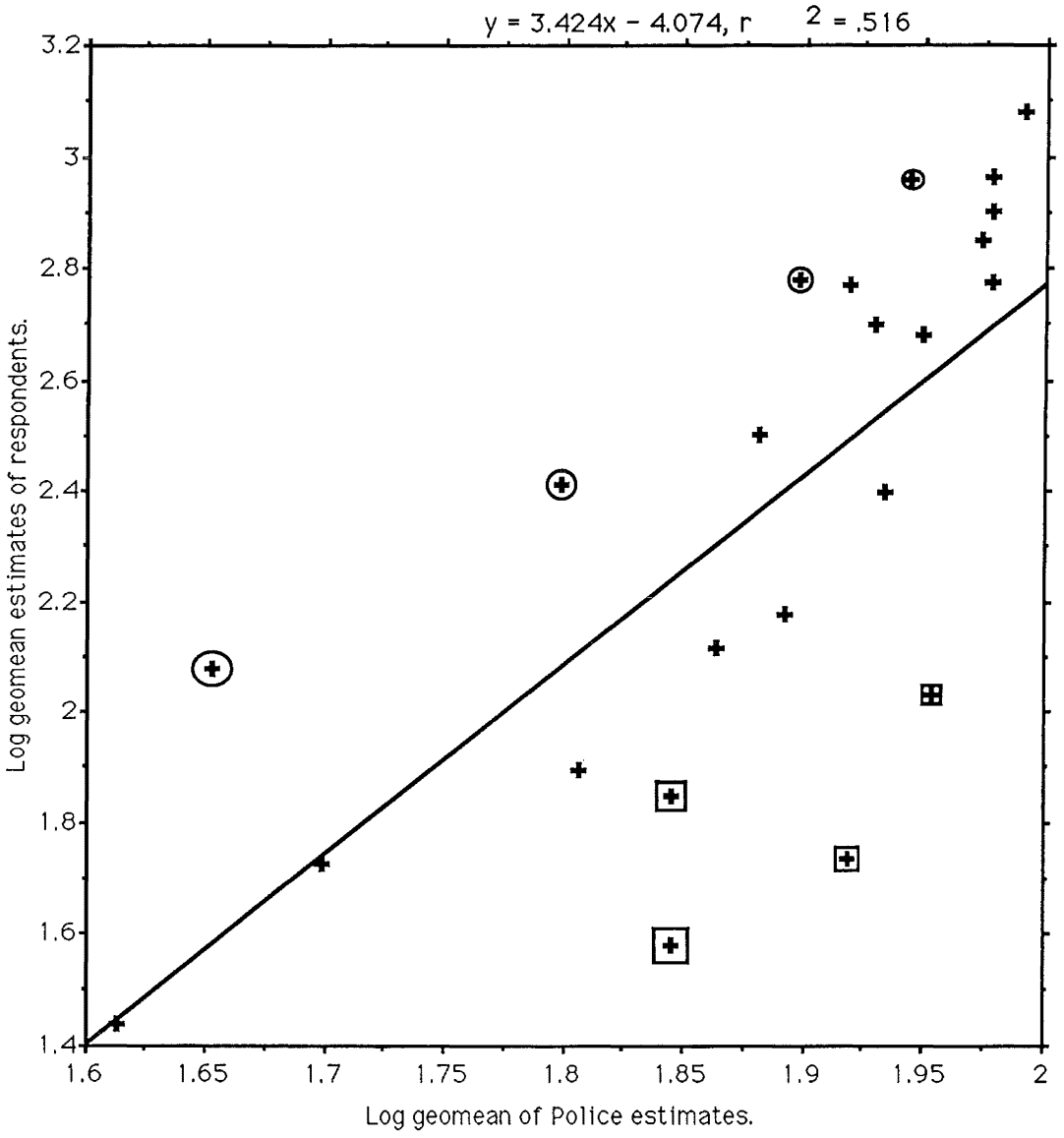


Figure 8. Logged geometric means of estimates by all respondents against the logged ratings of clearance priority by the New Zealand police.

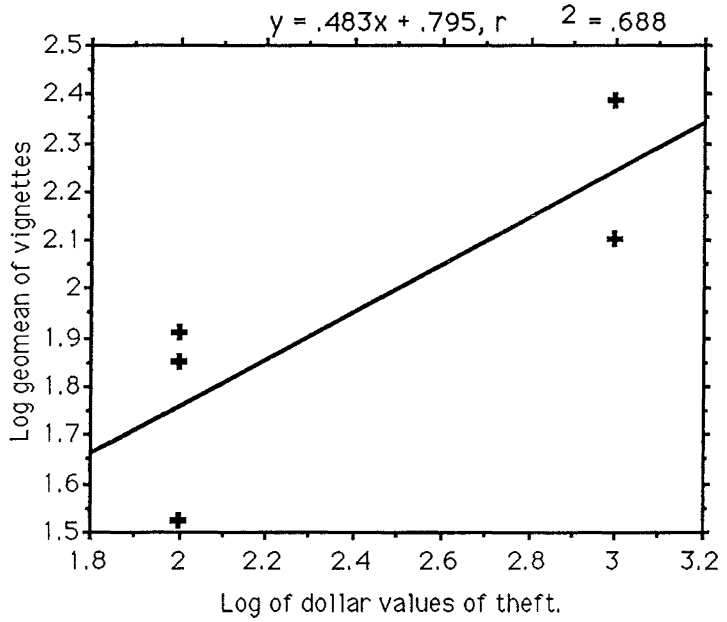


The four crimes that are ringed and found farthest above the line of best fit in figure 8 are those crimes regarded as being more serious by the public than by the police as determined by the clearance priority values of the police. These crimes were, in decreasing order of seriousness: child molestation, abandoning a child, carrying an offensive weapon, and driving while disqualified. The boxed crimes found farthest below the line of best fit, were seen as being more serious by the police than by the public. These were, in decreasing order of seriousness: selling cannabis, possession of cannabis, theft of $100, and non payment of $100.

The estimates of the seriousness of crime cannot be plotted against the actual magnitude of sensation that crime as a social stimuli produces, because the true value of social stimuli is unknown. Because it is not possible to compare social judgements directly against a known objectively measured metric, some form of construct validity is required. One form of construct validity in the analysis of comparisons between social judgements of crime seriousness is to use the perceived seriousness of thefts to ascertain a power function of the dollar amounts stolen. Sellin and Wolfgang (1964) used this approach in their research to produce a scale of crime seriousness. The numeric estimates of seriousness by respondents for each crime involving a dollar amount in its description were plotted against the actual dollar values. As the linear function shown in figure 9 suggests, the perceived seriousness of thefts is a power function of the dollar amount stolen. The regression coefficient of .483 from the seriousness estimates given by respondents in this study, indicates that for one theft to be considered twice as serious as another the dollar amount stolen must be approximately 4 times larger, ($4^{.438} = 2$).

This relationship demonstrates the construct validity of the scale of respondents' crime seriousness estimates in this study. The five crimes used in this analysis were; fraud involving $1000, burglary of items valued at $1000, theft of $100, non-payment of $100 and receiving property worth $100. The seriousness estimates were those given by respondents to each of these crimes in the crime seriousness questionnaire.

Figure 9. Geometric means of the seriousness of crimes plotted as a function of dollar values of theft.



Some conclusions can be drawn from the relationships represented in this section. The relationship between numerical judgements of crime seriousness made by respondents and the judgements made by legislators and the judiciary as to appropriate sentence durations were nonlinear. In both cases, the relationship can be described as a power function with exponent less than 1.0. The exponent of .6 for the relationship between maximum sentences and respondents' estimates deviated substantially from a linear relationship as did the exponent of .3 for the relationship between police and respondent estimates of seriousness. The exponent of .8 for the relationship between average judicial sentences and respondent estimates, although more highly correlated, was also a negatively accelerated function.

Significant correlations were found between the geometric means of seriousness estimates given by the different sample populations for the crimes surveyed. Table 7 presents the correlations between the logged geometric means of seriousness estimates by the respondent sample and the seriousness estimates of the police, judiciary and the legislature. The number of crimes for which seriousness estimates were derived for each population is given, along with the Pearson correlation coefficient for the comparison between populations and the level of significance.

TABLE 7. Correlations of logged geometric means of seriousness estimates between sample populations.

	Sample populations.		
Sample populations.	**Judiciary**	**Police**	**Public**
Legislature	.76 n=18 p<.001	.57 n=23 p<.01	.66 n=25 p<.001
Judiciary		.62 n=18 p<.001	.85 n=18 p<.001
Police			.72 n=23 p<.001

Across these populations an order of the degree of correlation with the other three populations appeared. The estimates of the public were more closely correlated with those of the judiciary than those of the police or the legislature, respectively. The police provided seriousness values that were closer to those of the public than the judiciary or legislature. The judiciary's estimates were more closely correlated with those of the public than with the estimates of the legislature or police. The final comparison across populations found that the correlation coefficient between the legislature and the judiciary was higher than that between the legislature and the public, or police. This analysis not only shows which sample groups were closer in there seriousness estimates for the crimes surveyed, but also which sample populations were the most disparate in their estimates.

A further examination of the estimates of crime seriousness by specific population sample was undertaken. This involved dividing the crimes surveyed into three categories. These categories were; crimes against the person, crimes against property, and victimless crimes. The twenty five crimes used in the survey of the present study were divided into three crime types as follows: Murder, rape, kidnapping, blackmail, incest, child molestation, abandoning a child, aggravated assault, aggravated assault of a police officer, assaulting a child under 14 years of age and common assault, were all classified as crimes against the person. Fraud, burglary, non payment of money, receiving stolen property, theft and book making were all classified as crimes against property. Brothel keeping, selling cannabis, possession of cannabis, and driving while disqualified, were classified as victimless crimes.

Some of the crimes surveyed fall into a grey area between categories. The medians of these crimes were not used in this analysis as they could not be justified as belonging to any of the three categories of crimes. These crimes were carrying an offensive weapon, armed robbery, rioting and defacing a coin.

A between group analysis was performed by comparing the median value of geometric means of seriousness estimates for the three types of crime, by each sample population. The median of estimates by the public for crimes against property was converted to a value of 100 and the ratios of the values given by the other populations calculated from there. These results are represented in table 8.

TABLE 8. A between group analysis of the ratio of medians of the geometric means of seriousness estimates by each sample population for the three crime types.

Type of crime.	Sample populations			
	Public	**Police**	**Judiciary**	**Legislature**
Person	672	91	1342	2964
Property	100	68	211	1497
Victimless	85	68	180	602

Two trends were evident in the data presented in table 8. Firstly, there was a priority by which each sample population rated the three different crime types. Each sample population saw crimes against the person as being more serious, on average, than crimes against property, again on average, which in turn were seen as being more serious than victimless crimes. Therefore, on aggregate, all four sample populations agreed on what the priority of seriousness was for each type of crime. Secondly, across three of the four sample populations there was a steady increase in the medians of seriousness estimates for the three different crime types. The values given by the police were disregarded for this analysis as they were clearly not a ratio scale. The ratio of median estimates of seriousness for each crime type, increased between the public and the judiciary, and between the judiciary and the legislature. The ratio of medians for each type of crime rated by the judiciary

was roughly twice as high as the median of estimates by the public. The first trend mentioned, would be expected in a society that rates crimes against the person as more serious than those against property or crimes without victims. The increase in medians across populations was also to be expected as the legislature's estimates are the maximum sentences for each type of crime and the judiciary's estimates are based on average sentences. The extreme difference between the legislature and the judiciary, and the legislature and the public, regarding crimes against property is disproportionate to any of the other differences between the ratios of medians. The proportion of difference between the public and judiciary is not as extreme as that between the public and legislature, for the three types of crimes. The finding that the public's median of seriousness estimates were less than that of the judiciary suggests that the public, on average, estimate these crimes less seriously than the judiciary.

3.6 RESULTS OF THE CRIMINAL ATTITUDE SCALE QUESTIONNAIRE.

A number of results were found from the answers given by respondents to the Criminal Attitude Scale, (C.A.S.), questionnaire. Table 9 presents the mean C.A.S. scores for females and males found by Taylor (1968), and the mean scores found from the present study. The numbers of female and male respondents from each study and the standard deviation of their scores are given as well.

Table 9. The mean scores, standard deviation and number of respondents of each gender, for the Criminal Attitude Scale questionnaire of each study.

	Taylor (1968).		Present study.	
	Male	**Female**	**Male**	**Female**
Mean score.	2.91	3.12	2.35	4.42
S.D.	.26	.29	1.49	1.45
Number.	46	40	40	40

The results of the 80 respondents who completed the C.A.S. were further analysed in two ways. A t-test was performed on the mean of responses given by female respondents in both studies; $t(1, 39) = 5.21$, $p<.001$. Another t-test was performed on the mean of responses given by male respondents in both studies; $t(1, 39) = -2.37$, $p<.05$. The differences between the mean responses of the same gender from each study were both significant. The female respondents in the present study had a far higher mean score than their counterparts in Taylor's 1968 study. According to Taylor this result would suggest that the female respondents of the present study have a very high degree of criminality. The high mean value obtained from female respondents suggests that they believe offenders are not entirely responsible for their actions. The mean score of male respondents in the present study indicates that they have a lower degree of criminality than their counterparts surveyed in 1968. The male respondents of the present study believed to a

greater degree that offenders are responsible for their actions. There was a significant difference obtained by compairing the mean scores of both female and male respondents in the present study; $t(1, 78) = -5.969$, $p < .001$.

An analysis of the C.A.S. scores of respondents was performed to see how these scores related to the estimates of seriousness by those same respondents. Respondents' C.A.S. scores were divided into four categories: Male respondents whose C.A.S. score was under the mean C.A.S. value for males, ie. 2.35, male respondents whose C.A.S. score was over 2.35, female respondents who had a C.A.S. score under 4.42, and female respondents whose C.A.S. score was above 4.42. A set of t-tests was performed to measure the difference in the means of the seriousness estimates for the 25 crimes from the female respondents with low C.A.S. scores and the female respondents with high C.A.S. scores. No significant differences were found between the means of these two groups of female respondents for any of the 25 crimes.

A similar set of t-tests was performed to measure the difference in means of seriousness estimates by male respondents with low C.A.S. scores and by male respondents with high C.A.S. scores. One significant difference was found between the means of seriousness estimates for the 25 crimes surveyed. The crime was theft of $100 and produced a moderate level of significance, $t(1, 37) = -2.25$, $p < .05$. This result indicated that low C.A.S. males rated the crime of theft of $100, on average, less seriously than high C.A.S. males. Why this particular crime produced a significant difference in the means of seriousness estimates by these two groups of male respondents, from the 25 crimes surveyed, is difficult to explain. The fact that male respondents in the

higher C.A.S. score category rated the crime of theft more seriously seems contradictory. The higher the C.A.S. score of a respondent the higher their degree of "criminality". These results found that male respondents with a higher C.A.S. score rated the crime of theft more seriously than their lower C.A.S. scoring counterparts. It would be expected that respondents with a higher degree of criminality would rate crimes less seriously, in general. However, all respondents were made to equate the seriousness of burglary to 100 units when giving seriousness estimates on the questionnaire. It may well be that respondents differed in their attitudes to burglary or theft of $100 and to crime overall.

The conclusion that can be drawn from the analysis of differences between C.A.S. scores and their relationship with seriousness estimates is that C.A.S. scores do not strongly relate to different patterns in the perceived seriousness of crimes. The results obtained from the analysis of C.A.S. scores and the means of seriousness estimates, revealed that these two different measures of the opinions or representations of respondents generally did not create any division among the consensus found from the seriousness estimates of respondents for each of the crimes. The conclusion reached is that this result reinforces the consensus argument made earlier.

CHAPTER FOUR

DISCUSSION

4.1 GENERAL FINDINGS.

The major results indicate that the technique of magnitude estimation was used effectively in this study. Useful data were obtained from the respondent sample. Respondents understood the requirements of the technique of magnitude estimation, as indicated by the line estimation exercise. The power law relationship was found for the data obtained from the public, police and legislature. The power function was a good predictor of seriousness in relation to the correlation between maximum sentences and the logged seriousness estimates of respondents. The relationships between the numerical judgements of crime seriousness made by respondents and those made by legislators, judiciary, and the police, were all nonlinear. This can be seen in figure 4 where the geometric mean of estimates by respondents are compared with the average sentences of the judiciary. The relationship is curvilinear around the line of best fit. Each of the relationships between the seriousness estimates of sample populations systematically deviated from linearity and each relationship, except that between the judiciary and the public, could be better described as a power function.

The power law finding is similar to results found by Sellin and Wolfgang (1964), and Gescheider *et al.*(1982). Each of these studies found that the relationship between public estimates of crime seriousness and judgements made by legislators of appropriate sentence durations, was a negatively accelerated function that substantially deviated from a linear function. The power exponents of .6 for the relationship between the public and the legislature in this study were similar to the exponents of .7 in the Sellin and Wolfgang study and .5 found by Gescheider *et al.*(1982). The exponents of .8 between the public and the judiciary and .3 between the public and the police, were found also from the results of the present study. The slope of .483 is slightly higher than the regression coefficient found by Sellin and Wolfgang (1964), from an analysis of similar offences involving the same dollar values. Although Sellin and Wolfgang recovered a regression coefficient of .17, Lodge (1981) reported a more typical slope of .27 from a number of similar studies. By achieving a construct validity of the scale of estimates of crime seriousness the technique of magnitude estimation is seen to demonstrate construct validity, as well.

Different correlations of the overall seriousness of crime and the seriousness estimates of specific crime types were found between different populations. The different levels of the criminal justice system, from the public, police, judiciary through to the legislature, related to each other with varying degrees of affinity. The highest correlation was found between the public and the judiciary. This result is an interesting one in light of such statements as, "people believe that courts do not deal harshly enough with criminals" and "leniency by the courts is an important cause of increasing

crime." (Fox and Freiberg, 1990). Clearly, there may be some members of the general public who believe these statements. However, the average view of the public sample represented by the respondents of this study was closely correlated with that of the judiciary. The correlation between the public sample and the police was moderately high while the correlation between the public and the legislature was the second lowest of the comparisons. The lowest correlation between sample populations was between the police and the legislature. Apart from the ranking of the seriousness of different crimes, the scale of clearance priority for the police was not effective when applied to the analysis of differences between the police and other sample populations.

Certain trends appeared when sample populations were compared against each other in terms of the seriousness estimates of each for crimes against the person, crimes against property and victimless crimes. The fact that the seriousness estimates of these crime types decreased in numeric value between crimes against the person and crimes against property, and between crimes against property and victimless crimes, for all four populations, was significant and helps to clarify the position of each population on these types of crime. The deviations found from the comparison of logged geometric means of seriousness estimates by the legislature and the public, were crimes whose level of seriousness each population disagreed on most. The public regarded assaulting a child, common assault and driving while disqualified, more seriously than the legislature. The legislature rated brothel keeping and non payment of $100 more seriously than did the public. The reasons for these differences between the public and the legislature could be due to anomalies within current legislation where certain crimes have been

regarded too leniently in the past by the legislature and the public now feel that the maximum sentences regarding these crimes should be increased. With regard to the three crimes that the public regarded as less serious than the legislature, the difference in opinion shown between these two populations may be related to the fact that the maximum sentences for these three crimes are somewhat out dated.

The use of crime labels and crime vignettes in different sections of the questionnaire did not produce any marked differences in the means of seriousness estimates of respondents. This implies that the inclusion of expanded descriptions of each crime, ie. crime vignettes, as opposed to stereotypical crime descriptions did not have a significant effect on the seriousness estimates by respondents for the crimes surveyed. This may be explained by the respondents already having an accurate perception of the seriousness of the crimes surveyed, so that different descriptions of each crime did not affect respondents' judgements of the seriousness of those crimes. Another reason could be that after completing the first section of the questionnaire, be it crime vignettes or crime labels, the respondents may have realised that the same crimes were repeated in the second section and given them the same seriousness estimates that they gave to the crimes in the first section.

A group consensus on the issue of crime seriousness was established for the respondent sample in the present study. This consensus was not affected by the demographic variables of respondents such as socio-economic status, gender, age or recent experience as the victim of a crime. This result is similar to findings by Levi and Jones (1985) and Rossi *et al* (1974), who also found

high levels of agreement amongst public samples on the relative ordering of the seriousness of crimes and few significant differences in the seriousness estimates of crimes between groups classified by age, gender, race, socio economic status and experience as the victim of a crime. The lack of a relationship between the C.A.S. scores of both female and male respondents and their seriousness estimates for crimes was significant. Respondents who scored highly on the C.A.S. did not give lower estimates of crime seriousness, on average, than respondents with low C.A.S. scores.

The finding that the respondents, be they female or male, young or old, victims or non victims, estimated similar values for the seriousness of the 25 crimes surveyed, support the notion that the norms concerning crime seriousness are widely diffused throughout subgroups of society. Even though the controversial aspects of the seriousness of crimes and the obvious multidimensional nature of crime itself may be expected to contribute to the variability of respondents' estimates, the standard deviation of the geometric mean of estimates or the interquartile ranges of respondents' estimates for each crime revealed no significant level of variance between respondents Three significant differences in the means of estimates between respondent subgroups were found through t-tests. The means of females were significantly higher than males for the seriousness of the crimes of brothel keeping and defacing a coin. Victims of a crime within the last twelve months also found these two crimes to be significantly more serious than did non victims. The third significant difference was found between the means of seriousness estimates by respondents over 56 years old and respondents between 15 and 35 years of age. The older respondents regarded the crime of

non payment of $100 more seriously than the younger age group of respondents. That only these three results were found from a possible 200 comparisons for the 25 crimes between eight different subgroup permutations, is not only a testament to the strength of the consensus of the respondent sample, but is also rather difficult to explain. General observations such as older respondents being more responsible than their younger counterparts, are only partial explanations. There may be a strong case for female respondents regarding brothel keeping more seriously than male respondents if those female respondents believe brothel keeping to be a form of female exploitation. The high percentage of female respondents who made up the victim subgroup helps to explain the similarities between the means of seriousness estimates for the female and victim subgroups. The difference in means between females and males and victims and non victims in regard to the defacing of a coin could be due to chance and may be explained by further questioning of respondents.

The results of the C.A.S. showed female respondents had a far higher mean score than both the population mean score found by Taylor (1968) for female respondents and the mean score of the male respondents in the present study. The C.A.S. scores of male respondents were similar to those of the population mean score found by Taylor (1968), for male respondents. The female respondents in the present study had a far higher mean score than their counterparts in Taylor's 1968 study. According to Taylor this result would suggest that the female respondents of the present study have a very high degree of criminality. This result may be explained by the more independent role of women in society in the 1990's. Why there should be such

a large difference between the mean scores on the C.A.S. by male and female respondents in the present study, is a point of some conjecture and probably outside the scope of the present research. This result does however, align itself with those of Lampe (1982), who found that the male respondents in his study attributed responsibility for an offender's actions more to the individual than to the family or society of the offender.

There are many tangents that a researcher can follow in attempting to explain different findings, but in summary, the similarities far outweighed the differences between respondents' seriousness estimates in this study suggesting that there is not a wide range of opinion on the issue of crime seriousness in present day Christchurch. Perhaps a study that measured the group consensus on the value of a positive issue may find that there is more respondent variability than there is in the group consensus of a negative issue, such as crime. The results of this study show that the average sentences passed down by New Zealand courts for crimes seem to be right if public perception of offence seriousness is taken as the criterion.

4.2 LIMITATIONS OF THE STUDY.

There are a number of shortcomings associated with this study. The number of crimes used in the survey of respondents was small. The use of the police clearance priority scale was inappropriate for comparison with ratio scales of seriousness estimates. Average and maximum sentences may not necessarily be an accurate indicator of the seriousness accorded to a crime by the judiciary and the legislature. The courts consider a wide range of factors associated with the offence committed, such as the offender's age and any

record of previous criminal convictions. The degree of knowledge held by respondents regarding the crimes surveyed was not measured. The amount of information on crime known by respondents could have made an impact on the seriousness estimates given. The ethnicity of respondents was not measured in the present study, however, Lampe (1984) and Rossi *et al.*(1974) used ethnicity as a variable of seriousness estimates, and found no significant differences between races.

The present study measured respondents' estimates of the seriousness of a range of crimes and not what respondents regarded was an appropriate punishment or severity of sentencing for each crime. Unlike Sellin and Wolfgang, the estimates of seriousness used in this study and obtained from the average sentences passed down by the judiciary, were not responses by a group of judges to a magnitude estimation survey on the seriousness of different crimes. In other words, the data for the judiciary's estimates of crime seriousness used in this survey was not obtained through the technique of magnitude estimation. If data had been collected from the judiciary in this manner, a different relationship may have been found between the seriousness estimates of the public and the judiciary. Only 18 average sentences were obtained for the 25 crimes surveyed. Furthermore, a custodial sentence is only one form of punishing an offender. Community service, fines and deferred sentences are some of the various options available to the judiciary. Finally, there was an assumption made regarding the non-criminality of respondents on the C.A.S. questionnaire. The form of questionnaire used was designed for a non-offender population. The respondents surveyed were not screened for any criminal history.

4.3 FUTURE RESEARCH.

Future research may focus on the limitations of the present study to improve the measurement of crime seriousness in New Zealand. Researchers could measure the seriousness estimates of crime from the public, police, judiciary and members of parliament, through the technique of magnitude estimation, by using the same form of questionnaire on each population. An extension of the present study may involve the survey of offender and non-offender populations for their estimates of crime seriousness and C.A.S. scores, to ascertain any similarities or differences between the two.

It is a qualitative assumption to claim that a ratio scale measures the ratio judgements by respondents of nonmetric stimuli, such as crime seriousness. Most social stimuli are not quantitatively defined. Assuming a power function relationship is uncovered, as seen in the relationship between maximum sentences and respondent estimates of seriousness in this study, how much emphasis can be placed on the empirically obtained regression coefficient? How can the statement that, judgements of the seriousness of crimes of theft are governed by a power function with a coefficient of .483, be verified? These challenges can be addressed by the validation of magnitude scales through the cross-modality matching paradigm. Future research could apply one of many cross-modality matching procedures to the validation of a magnitude scale of crime seriousness, as shown by Gescheider *et al.* (1982).

4.4 CONCLUSION.

A societal consensus was established from the data returned by respondents. Significant levels of correlation were obtained between the public estimates of seriousness and the estimates of the different agencies within the criminal justice system. Moderate correlations were found between the police, judiciary and legislature. The overall findings show that between the different populations, the seriousness estimates of crimes are more agreed upon than disagreed upon. Both the technique of magnitude estimation and the power law were seen to be effective in the measurement and representation of the seriousness of different crimes. There are problems associated with the method of comparisons between data from different populations used by this study. This situation can be rectified by incorporating the adjustments, suggested earlier, in any future research that measures general attitudes towards the seriousness of crime.

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APPENDIX.

The seriousness of crime questionnaire

SERIOUSNESS OF CRIME QUESTIONNAIRE.

This questionnaire forms a part of the Masters thesis of Stephen Davis at the University of Canterbury. The thesis is concerned with the estimation of the seriousness of different crimes. To assess magnitude estimation a training exercise is included.

All responses are confidential. If you have any queries please ring Stephen on 3487386.

Please indicate your age and sex by circling the appropriate group.

Age: 15-25 26-35 36-45 46-55 56-65 66 and over.

Sex: Male Female

Please state your occupation.

_____

Have you been the victim of a crime within the last 12 months.

Yes No

Following are a number of lines. Each line is of a different length. Please make an estimate of what you feel the length of each line is relative to the **standard.**

The **standard** is a line of 100 units of length. (_____)

If you feel a line is four times as long as the **standard** then assign it 400 units (4x100). If you feel a line is half as long as the standard then assign it 50 units, and so on. There is no upper limit to the estimates you can make.

Feel free to use decimals or fractions.

Line.	Response.
(____)	..... units
(_____)	..... units
(_____)	..... units
(_____)	..... units
(_____)	..... units
(_____)	..... units
(_____)	..... units
(_)	..... units
(_____)	..... units
(_____)	..... units

Following is a list of crimes. Please make an estimate of what you feel is the seriousness of each of these crimes to society.

Estimate the seriousness of each crime relative to the **standard.**

The standard is Burglary which has100 units of seriousness.

If you feel a crime is four times more serious than burglary then give it a seriousness rating of 400 units. If you feel a crime is half as serious as burglary then give it a seriousness rating of 50 units, and so on. There is no upper limit; use any number that shows how serious you feel the crime is. If you feel somethihg is not a crime, give it a zero.

Feel free to use decimals or fractions.

There are no "correct answers" to these questions. Different people have different ideas about the seriousness of different crimes.

The standard is burglary which has 100 units of seriousness.

Crime	Response
Armed Robbery	..... units
Burglary	..... units
Theft of $100	..... units
Incest	..... units
Common Assault	..... units
Selling Cannabis	..... units
Murder	..... units
Receiving property dishonestly obtained worth $100	..... units

The standard is burglary which has 100 units of seriousness.

Crime	Response
Fraud	..... units
Non payment of money totalling $100	..... units
Kidnapping	..... units
Rioting	..... units
Brothel keeping	..... units
Aggravated assault	..... units
Aggravated assault of a police officer	..... units
Assault on a child under 14 years of age	..... units
Abandonment of a child under 6 years of age	..... units
Driving while disqualified	..... units
Possession of Cannabis	..... units
Carrying an offensive weapon	..... units
Defacing a coin	..... units
Rape	..... units
Blackmail	..... units
Child molestation	..... units
Book making	..... units

Following is a list of crimes. Please make an estimate of what you feel is the seriousness of each of these crimes to society.
Estimate the seriousness of each crime relative to the **standard.**

The standard is; the offender enters a house and steals furniture worth $1000, which has 100 units of seriousness.

If you feel a crime is four times more serious than the standard then give it a seriousness rating of 400 units (4x100). If you feel a crime is half as serious as the standard then give it a serious rating of 50 units, and so on.
Feel free to use decimals or fractions.

Crime	Response
The offender robs a person at gun point.	..... units
The offender enters a house and steals furniture worth $1000.	..... units
The offender steals goods worth $100 from a supermarket.	..... units
The offender has sexual intercourse with his daughter.	.....units
The offender, with their fists, beats a victim. The victim lives but requires hospitalisation.	..... units
The offender sells cannabis to an adult.	..... units
The offender stabs a person to death.	..... units
The offender knowingly buys stolen property worth $100.	..... units
The offender sets up a bogus company and through it fraudently obtains $1000 from a number of private individuals.	..... units
The offender fails to pay $100 on an account owing.	..... units
The offender kidnaps a person. A ransom is paid and no physical harm is inflicted on the victim.	..... units
The offender takes part in a riot along the main street of town.	..... units

The standard is; the offender enters a house and steals furniture worth $1000, which has 100 units of seriousness.

Crime	Response
The offender runs a house of prostitution.	..... units
The offender wounds a person with a gun. The victim lives but requires hospitilisation.	..... units
The offender wounds an on duty police officer with a gun.The police officer lives but requires hospitilisation.	..... units
The offender, with their fists, beats a child under 14 years of age. The child lives but requires hospitilisation.	..... units
The offender takes their child, who is under 6 years of age, into town and leaves them there.	..... units
The offender is stopped and found to be driving while disqualified.	..... units
The offender has cannabis in their possession.	..... units
The offender, while being searched by the police, is found in illegal possession of a gun.	..... units
The offender defaces a 50 cent coin.	..... units
The offender forces a female to submit to sexual intercourse.	..... units
The offender threatens to reveal a fact about the victim that would damage their reputation if the victim does not give the offender a sum of money.	..... units
The offender takes bets in an illegal gambling house.	..... units
The offender indecently assaults a girl under the age of 12 years.	..... units

CRIMINAL ATTITUDE SCALE.

Please indicate your agreement or disagreement with each of the following statements by circling either true or false.

1. Criminals deserve their sentence. True False

2. Criminals do not want the police to catch them. True False

3. The judge sentences criminals, not the probation officer. True False

4. The police hound you if you have a criminal record. True False

5. The probation officers are interested in criminals and try to help them. True False

6. A fixed sentence is better than an indeterminate sentence. True False

7. People get sentenced on their records, not on what they have done. True False

8. There is some point in planning for the future and not living from day to day. True False

9. Criminals are able to get some peace when they are caught. True False

10. Punishment begins on the day the criminal is released from the institution. True False

11. Once in trouble always in trouble. True False

12. It is the prisoners who cause the trouble for themselves not other people. True False

13. Criminals are at home in prison. True False